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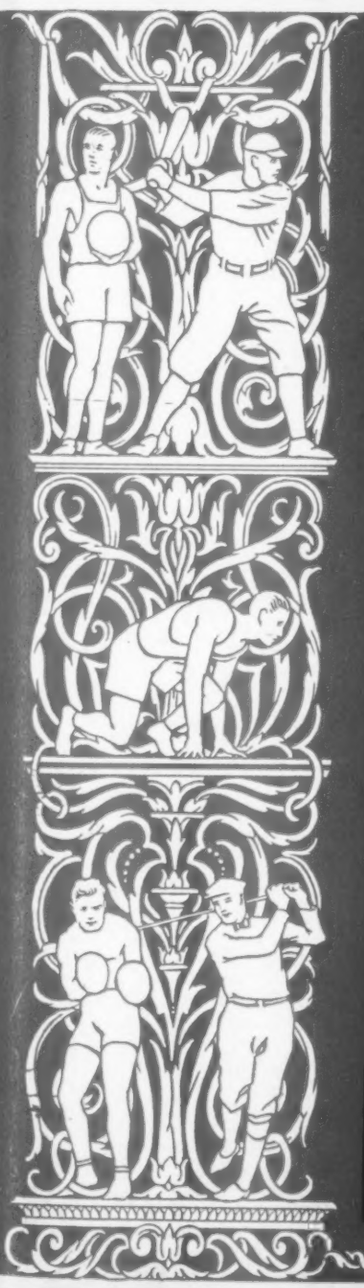

MAY, 1928

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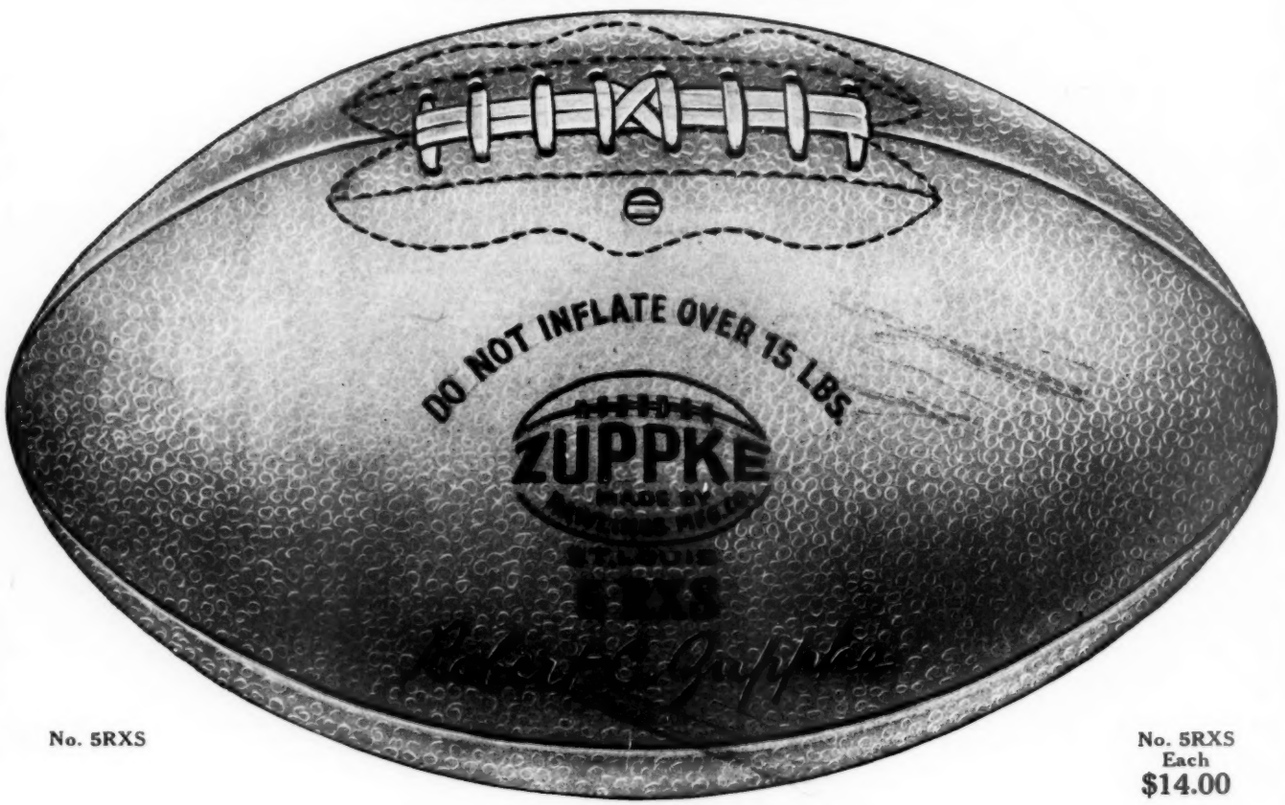

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The June JOURNAL

THE June number of the ATHLETIC JOURNAL will be devoted to a summary of the year's developments in athletics, to news items concerning the athletic coaches and to short articles and suggestions which our reader coaches may care to contribute. If the athletic coaches who are interested in the things that this magazine is attempting to accomplish will co-operate by sending in their suggestions, their help will be very much appreciated.

This is the great age of athletics in America and the coaches of today are laying the foundation for America's athletic future. Any one who has some constructive idea that will help the game should be glad to pass that idea on to his brother coaches. With the help of the subscribers we can make the June JOURNAL the most interesting and useful issue of the year.

The National Association of Basketball Coaches

THE Second Annual Meeting of the National Association of Basketball Coaches was held at the Hotel Windermere, Chicago, Illinois, April 5th and 6th, 1928.

The meeting was well attended by representative coaches from all over the United States, a majority of the members being in attendance.

The Association had the pleasure of hearing the following men give interesting addresses:

Dr. F. C. Allen, University of Kansas, President.

Dr. James Naismith, University of Kansas, inventor of basketball.

Major John L. Griffith, Commissioner of Western Conference.

L. W. St. John, Ohio State University, Chairman Rules Committee.

Discussions were held and practical demonstration given of the interpretation of the basketball rules in an effort to bring about more uniformity in their interpretation throughout the different parts of the country.

Various prospective changes in the present rules were discussed, but the proposal of this Association's Rules Committee that we recommend to the Basketball Rules Committee that the present rules remain unchanged for the coming year was endorsed by the entire organization.

The officers and directors elected for the coming year were as follows:

OFFICERS AND BOARD DIRECTORS FOR 1928-29

Dr. James Naismith, University of Kansas, Honorary President.

Dr. F. C. Allen, University of Kansas, President.

J. Craig Ruby, University of Illinois, 1st Vice-President.

L. P. Andreas, Syracuse University, 2nd Vice-President.

C. M. Price, University of California, 3rd Vice-President.

A. A. Schabinger, Creighton University, Secretary-Treasurer.

(Signed) A. A. Schabinger.

The ATHLETIC JOURNAL

VOL. VIII MAY, 1928 No. 9

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Request for change of address must reach us thirty days before the date of issue with which it is to take effect. Duplicate copies cannot be sent to replace those undelivered through failure to send advance notice.

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The ATHLETIC JOURNAL
Nation-Wide Amateur Athletics
Volume VIII CHICAGO, ILLINOIS Number 9

Technique of Baseball

"Watch the ball. Never Take your eye off of it" is the first rule of baseball.

By Hans Lobert
Coach of New York Giants

THE first rule of baseball, which is an unwritten rule, is "Watch the ball. Never take your eye off of it whether batting, fielding, running or sitting on the bench."

This is a very important rule to follow as it teaches the player to follow the play, which in turn leads to alertness.

Batting

Try to develop your own style, that is the one best adapted to your body. However, in developing your own style, there are certain fundamentals which hold good for all styles of hitting that cannot be overlooked.

Select a bat to your liking and one which meets the requirements of the baseball rules. If this bat you select is too heavy you will be unable to swing properly, if it is too light the balls you hit with it will lack power or drive.

Take a natural stance at the plate, with the weight evenly distributed on both feet. (Your body must feel in perfect balance.) With too much weight on the rear foot the batter has a tendency to hit up at the ball. The feet should be about 12 to 24 inches apart. Should you feel uncomfortable or rigid in this stance relax momentarily by bending both knees, without shifting your feet.

Hold the bat firmly but not so tight that the knuckles become white. Some batters, in fact a number of major leaguers, take hold of the bat at the end of the handle, but unless you are a big powerful man and have the coordination to handle the bat in this manner, it is advisable to grip the bat from two to four inches from the end. Either place the hands an inch or two apart or hold them together as seems best.

Two great batters, Hans Wagner and Ty Cobb have had remarkable success gripping the bat with their hands from two to four inches apart. The latter told the writer that this enabled him to get perfect control of the bat. His record substantiates this statement. However, more batters grip the bat with the hands touching. Chief among these batters are Ruth, Hornsby and Heilman.

While waiting for the pitcher to deliver the ball watch the hand containing the ball,—not the pitcher's body or arm. If you do this carefully you will be tricked and will swing at the ball instead of at the motion of the pitcher.

Hold the bat back of the top of your shoulder with the elbows away from the body. Locate the ball as quickly as possible; start your swing and step at the same time. Swing parallel or horizontal with the ground. Try to meet the ball in front of the plate. This is what major league players term "Getting in ahead of the ball" or "Out in front." When the bat comes into contact with the ball, the bat must not stop but must follow through like a golfer's swing. This insures power and drive behind the ball.

Since the introduction of the lively ball, players are following through and are swinging much harder than in the days of John McGraw's famous Baltimore Orioles when the "Baltimore Chop" or choke-hitting was in vogue.

In the days of the Orioles there was much place-hitting, bunting, hit and run and base running.

The modern Goliath of baseball has changed the method of attack. Players are going in for slugging. Here are a few don'ts for batters:

1. Don't lean towards the catcher.
2. Don't lift the rear foot in hitting.
3. Don't take too long a stride. If you do this the body is thrown off-balance and the batter becomes a "fly-ball hitter." A short stride insures line hitting.
4. Don't step in the water bucket or spike the bench, by pulling away from the plate.
5. Don't let the hips fall away from the plate when swinging.
6. Don't hit at bad balls.
7. Don't leave the batter's box until you have hit the ball and have put your power into the swing.
8. Don't "pump handle" or move the bat up and down in front of your body.

In order to become a successful batter you must realize that while at bat you are on your own initiative. You must figure every ball a strike and be ready to hit unless the ball proves to be bad. You must concentrate, have a good eye, be fearless, cool, have plenty of courage, be aggressive, have plenty of self-confidence, and not be over-anxious.

Bunting

Take your regular stance at the plate. Be sure the ball you bunt is a good ball. Never bunt at a bad ball, especially one that is high. As the pitcher delivers the ball, shift the feet

Hans Lobert's Record:

Cincinnati 1906-11 inclusive
Philadelphia (N) 1911-15 inclusive
New York (N) 1916-18 inclusive
Baseball Coach West Point 1919-25 inclusive
Round World Tour as player with New York Giants and the Chicago White Sox 1913 and 1914
Tour of Europe with New York Giants as Secretary 1924
Holder of World's Record (standing start) circling the bases. Time 13 4-5 seconds

forward, and have the body half-facing the pitcher.

Then extend the arms so that the ball will be met in front of the plate. The bat must be held level with the ground. Slide the hands down towards the middle of the bat and loosen your grip just enough to control the bat and to deaden the ball.

The sacrifice bunt is intended to move the runner up a base at the sacrifice of a batter. In this style the batter makes sure that he bunts before starting to run.

Most players dislike to practice bunting and therefore, when they are ordered to practice this, they lay down sloppy, careless bunts. However, when a bunt is needed in a game they strain to make their muscles execute a perfect bunt, something which is foreign to them, and they fail. Hence, practice bunting carefully.

The Catcher

The catcher is one of the most important cogs in the baseball machine. He is like a field-general and has the entire play in front of him.

He must be a good receiver, have a strong and accurate arm, be a quick thinker, a judge of batters and of pitchers, shifty, have plenty of aggressiveness and life.

The Pitcher

Don't learn to be a thrower, learn to be a pitcher. Always have some object in view in throwing a ball. This will develop control.

The pitcher must have a free, easy motion, a cool head, confidence, a fast ball, a curve, a change of pace and a good memory.

A number of young pitchers let the ball leave the hand too soon. In other words, they let the ball go above the line of their shoulders instead of bringing the ball down below this line and following through as if reaching for the plate. As soon as the pitcher delivers the ball he should right himself quickly and be in a position to field hard line hits, ground balls and bunts. He must be ready to move from the mound quickly going to his position as dictated by the play.

Avoid all freak deliveries until control is perfected.

The Infielders in General

The infielder should possess a good pair of hands and an accurate arm. He will help himself if he can throw side-armed, over-handed and underhanded. A man that is a quick starter and who can cover ground will be at a premium in the infield.

If the infielder expects every ball to be hit at him and if he knows beforehand what he is going to do with the ball before he gets it he will be ready for the situation when it arises.

He must not watch a runner when he is in the act of fielding a ball. He should move quickly on the ball and get in front of it.

Getting the body down low is another aid in fielding ground balls.

Teach infielders not to shirk. It is better to make an error and try for the ball than to let the ball go to the outfield for a clean hit. If a man makes an error, it is fatal to worry about it. He should dismiss it as a part of the game and become determined to get the next one.

In fielding a grounder do not put the feet together, but open up by spreading both feet and play the ball with confidence.

One hand plays are spectacular but are not as sure as when two are used. Many young players in training camps have a tendency of trying to make a play before they get the ball. It is important that the players get the ball before attempting to make a play.

Outfield Play

Starting quickly in the correct direction at the instant the ball is hit is known as "getting the jump on the ball." This is one of the most important phases of outfield play. It is the difference between good and poor outfielders. It determines in many cases whether or not the batsman gets a hit or the outfielder a put-out.

To get the jump on the ball the player must watch the ball leave the pitcher's hand, watch it all the way to the plate, and see the ball hit. He does not wait until the ball is hit before he picks it up, but he does this beforehand. He can help himself by knowing what the pitcher is throwing. This can be arranged and is a valuable aid to the outfielder.

There are two methods of catching a fly ball: First, with the arms extended and palms up, forming a cup; second, with the elbows bent upward, palms up and out. The first method is the more graceful and is convenient on running catches, but the second is the surest and enables the fielder to get the ball away quicker than the first method. Therefore, if possible, use the second method if there are men on bases when the catch is made.

Practice on catching line drives is often neglected by outfielders. It is just as important as practice on high flys, for practice alone will enable them to make an instantaneous decision as to whether to tear in for a shoe-string catch or to take the ball on the first bounce. It will also teach an infielder whether the ball is well hit and may become a long extra base hit if he does not start back at once.

Hints

1. Good outfielders make difficult catches look easy.
2. Be there waiting for the ball, try to avoid catching it on the run.
3. Try to be in a position to throw when the ball is caught.
4. Know beforehand where you are going to throw the ball.
5. If no one is on the bases take a practice throw at some base.
6. Help the other outfielder on fly balls. You get a side view of his play while he gets the forward or harder view of the same play.
7. Work on your weakest side and kind of ball.
8. Back up the infielders on thrown as well as batted balls. Back up the other outfielder.
9. Do not forget to yell loudly for a fly ball when you are going to take it. The nearest player should answer his teammate. This will prevent players colliding.

It does not matter who catches the ball, but some one must do it. Team work is what counts on this play.

Base Running

Base running is an art all in itself A player does not necessarily have to be a ten second man to be a good base runner. A quick starter who can get the jump on the pitcher's motion can become an excellent base runner.

The base runner must know the situation, as to the score, inning, the number out, etc.

Have him learn the art of sliding feet first on both sides of the body. Learn the hook and fall away slides.

In sliding, slide low, getting the body almost parallel to the ground. After the slide is completed be sure to hold the bag and get up instantly looking for a wild throw or fumble, which will give the base runner an extra base. Do not go for this extra base unless you are sure you can make it.

Conclusion

In baseball do not depend only on your physical ability but learn to be a quick thinker, taking advantage of every opportunity that presents itself.

Think baseball.

There is no second guessing for the player in the game. The spectators, managers, coaches and players on the bench always have the second guess. The fans yell "Why didn't he bunt," etc. Do not let this bother you.

Any player actually engaged in playing the game must do the right thing at the right time in the right way.

Practice makes perfect.

Play hard, but fair. Be a game loser when you must and be a generous winner when you can.

Baseball Defensive Strategy

By Leslie Mann

IN the first two articles on strategy in baseball I called your attention to the various styles or systems, coaches or managers have used and to offensive strategy. In this article I will attempt to cover only the high spots on defensive strategy.

The first and most important element in defense is the pitcher. I shall not attempt to outline in detail a pitcher's job but will mention a few outstanding points for consideration.

All pitchers must learn their batters. Notice how he holds his bat, long or choke grasp, chop or swing hitter, length and direction of step, place in batter's box, rear, middle or front edge. Then after all of these are considered the pitcher should discover the ball the batter likes best; fast, curve, slow, high or low, inside or outside. Learn also whether the batter is ineffective against side arm, overhand or underhanded pitching. When all of these are considered and learned by the pitcher he ought to be effective as a pitcher providing he has control.

All of the above considerations recall to my mind a talk a great manager recently gave to his club just prior to a big game. His talk ran something like this: Mgr. "Now you pitchers—all of you—We have talked over every batter on the opposing team and we have called your attention to this batter's weakness and to that batter's strongest points. The final answer is, will you remember these things under fire. The real test of a pitcher is when he tries to pitch the ball to the batter's weakness in the pinch, or occasionally we'll come down the middle to the plate to him—when it isn't going to hurt us, but in the pinch—always pitch to his weakness. Another thing don't forget you must mix up your kind of pitched balls. I know that Christie Mathewson's success was due to the fact that when he was in the hole, when the batter had him two balls and no strikes or three balls and one strike—he never came across the plate with a fast one or perfect strike; he gave the batter his curve, slow ball or fade away. He made them, strikes so if the batter did hit them, he didn't hit safely or for long hits."

Control is the greatest asset for a pitcher, and so today the pitcher that works does not pitch the same way to each batter; he changes occasionally.

At this time I want to recall to the pitchers one pitcher who has done more to make thinking pitchers out of just mere mechanical pitchers. Geo. Mogridge by carefully studying the various elements that confronted a pitcher worked out a series of actions that have tremendous effect defensively. The rules allow a pitcher twenty seconds to pitch. Too many pitchers when they get the ball preparing to pitch, get the sign from the catcher and pitch right away. So the first act of Mogridge was to vary his time of pitching. One time he would take five seconds to pitch, the next time he would take fifteen. He would count these seconds silently of course to himself and then pitch. This was not only disconcerting to the batter but most effective when runners were on bases. The baserunner never did know just when he was going to pitch, so this kept the runner from getting a big break or stealing. Not satisfied with only the varied timing on his pitchers, he also added a quick, jerky movement with his leg. This twist made him look as if he were going to throw to the first base to catch the runner, but would continue with the move and pitch to the plate. I have seen runners on first base dart back toward first base and be in motion towards the first base bag, while the ball was on its way towards the plate. This not only checked stealing but made it possible for the infielders to make double plays on ground balls.

The signals between the pitcher and catcher should be plain and simple until a baserunner gets on second base. From this point the real signal called should be protected. If there is no protection and a plain one finger for a fast ball and two fingers for a curve, three for a slow ball, thumb for a waste ball, the runner on second base can flash a sign known between him and the batter that here comes a fast ball or curve, etc. Here are a few signs or systems used by a few of the game's greatest catchers.

These signs only go when a runner is on second base. The catcher would place his heels together as he squatted down to give the supposed finger signs. The fingers meant absolutely nothing even though he gave a lot of them.

Heels together meant a fast ball; heels apart meant a curve ball; heels apart and fist shaking out towards the pitcher meant a slow ball. Sometimes the pitcher used his judgment and could throw a slow ball on a curve ball sign. Heels together and catcher's glove facing sideways out towards the pitcher meant a pitch out.

Another Series of Signals

Reading the fingers going up and down, e. g., in showing the fingers the catcher puts out one finger, two fingers, and then three fingers. That is running up—1-2-3—means a fast ball. Running down 3-2-1 means a curve ball. The thumb for a pitch out. 1-3-2 slow ball. 2-1-3 slow ball.

Another is the first sign after a certain finger. The catcher declares the key finger by the first finger he shows. Then after this finger appears again, the next sign is the call for the kind of a pitched ball wanted for example; the catcher shows 1 finger first. Here is how he could give the sign. 1-2-i-3—Three fingers would be the call, or 1-1-2—Two fingers the call. 1-2-3-1-1-2—One finger is the call. Now he shows 2 fingers, so it's the first sign after 2 fingers appear again. 2-1-2-3 or 2-2-1 or 2-3-2-1.

Another style might be to work according to the inning—odd and even inning. If it is the odd inning, it is the first sign after the odd fingers. 1-2-1- or 2 finger calls for a curve. 1-1-3-1 finger calls for a fast ball. 1-3-2; 3 fingers call for a slow ball. Now it is an even inning, the second, fourth, sixth or eighth inning so the first sign after the even fingers. 1-2-1 as the first sign of the last inning now converts into a 1 finger sign or fast ball. 1-1-3—no sign—a pitch out. 1-3-2 mean another series of signs must come and it is the first finger in the second series or 1-3-2 (first series) 3-1-1—or 3 fingers a slow ball. Many catchers assist pitchers in where they would like to have the ball pitched by the use of their glove. After the signal has been given they use the front tip of the glove as the indicator. If it's dropped downward they want the ball pitched low; it's up, they want it high, etc. In the recent years of modern baseball the catcher has not used a sign with the pitcher to throw to the various bases. When this did happen it brought too many minds into the play, and the old adage of "Too many cooks spoil the broth," certainly holds true in this case. The pitcher's throw to second base to catch a base runner off that base brings either the shortstop or second baseman into the play. This means three minds in the one play. It isn't necessary for the catcher to be in the play at all, only the pitcher and infielder making the play.

Pitcher Catches Baserunner Between Bases

Many times a batted ball is hit back at the pitcher and the baserunner on second base or third base stops almost at mid point between bases. The pitcher with the ball in his hand, is standing close to his pitching box. The first instinct for the pitcher is to throw the ball to third base if the runner is on second base to head him off. This throw sometimes is just enough to allow the baserunner time to return to second base safely. The correct action for the pitcher is to rush directly towards the baserunner. This will cause the baserunner to show how he is thinking whether he intends going on to third base or back to second base. The third base man of course is at his station as is the second base man on second base. The pitcher rushes hard all the time until the baserunner moves swiftly enough for the pitcher to throw the ball to the waiting base man. Only one throw is needed on this play, the pitcher to baseman. Of course, it is always best to rush the baserunner back to the base from which he came. This play calls for quick thinking and acting on the part of the pitcher. Another bit of quick and correct thinking on the part of the pitcher is for the pitcher to develop the habit of dashing towards first base on every ball batted past him on the left. Many times the first base man will go after batted balls that the second base man can field and discovers it too late, leaving first base uncovered. If the pitcher stood on the pitching box to watch the play, the batter could reach first base safely. The habit of covering first base ought to be developed so that he reacts instinctively to it. It is just as important to cover first base by the pitcher on this play as it is for him to know when a fast ball or curve ball is called by the catcher.

Catching Baserunners Between Bases

Every player should have a general knowledge of how a baserunner should be run down in catching him between bases. Very often a pitcher will catch a baserunner off first base and when the ball reaches the first baseman he in turn throws the ball to the second baseman to head off the runner. This is the first thought that the defensive player should have. Keep the runner from advancing to the next base. In this case it is the second base. The ball when it reaches the player ahead of the runner ought to stop the oncoming baserunner, and as he (the baserunner) attempts to hurry back to first base, the second baseman should rush toward the baserunner as fast as he can with the hand that has the ball held high overhead ready to throw to the first baseman.

The second baseman wants to rush the baserunner so that his momentum will be strong enough to allow the first baseman time to tag the runner far enough up in front of the bag so that the baserunner cannot slide under the arm of the first baseman safely back into first base. The second baseman ought to give the ball to the first baseman when the runner is about fifteen or twenty feet from the bag. The first baseman should stand a few feet up the line towards the runner, away from the bag. When this is played properly, only one throw is needed. The fewer times the ball is tossed back and forth between players in the run up, the better.

Converting One Out Into Double Play

To challenge those who play straight away baseball I will make this general statement. Whenever there is a baserunner on a base, any base, on first base, second base or only third base, and the ball batted is fielded by an infielder, a double play is possible.

When the runner is on first base we are familiar with the simple double play from second to first base. Now we will place a runner on second base. The ball is batted to the pitcher, shortstop or third baseman. The runner dashes for third base only to see the ball thrown to third base, unless fielded by the third baseman to head him off. He is caught between bases, second and third. His first thought is to delay being tagged out until the batter reaches second base. The batter rounds first base headed for second base when he notices his team runner caught between second and third. Now this is the most important defensive thought. The second baseman goes to the second base bag and stands there. He should never leave the bag.

The shortstop and third baseman delay tagging this runner, hoping the batter will round first base for second base. They toss the ball back and forth over the runner all the time forcing him back closer to second base. This is important. The ball should be in the third baseman's hand and as he runs toward the runner forcing him towards second base, he notices the batter coming into second base. As the batter reaches a spot about fifteen feet away from the bag, the third baseman throws past the runner and shortstop to the second baseman, who is standing at the bag who turns to tag the batter coming into the bag. The second baseman then must hurry and look where the runner is who was in the run up between second and third. He is off the bag and probably headed for third base. In such a case the second baseman throws to the pitcher or catcher, who ought to be at third base.

The first baseman should stay at first base, as sometimes the batter gets only half way down towards second when the other runner is tagged out. Then the ball might have to be thrown to the first baseman to catch the runner returning to first.

With only a base runner on third base, the ball is batted to any infielder who throws to the catcher heading off the runner attempting to score. The first baseman remains at first. The second baseman goes to the second base bag. The shortstop goes to cover third base. As the ball reaches the catcher, the runner pulls up or stops, and is returning towards third, apparently to delay so that the batter can get to second base, where a base hit will score him.

The third baseman follows the baserunner in towards the plate, keeping about fifteen feet behind the runner. The catcher as he catches the ball, cocks his arm prepared to throw to the third baseman, and at the same time rushes fast right down the line towards the baserunner. The baserunner turns to dash back towards third base and just as the runner turns and starts back toward third, the catcher throws the ball to the third baseman, who tags the runner out immediately. The batter in the meantime ought to be dashing around first base for second base. The third baseman after tagging the runner turns to throw either to first base or second base as the case might be, depending where the batter is. The batter ought to be caught somewhere between first and second bases. This completes the double plays that are outstanding.

The Importance of the Outfield

For a great many years it has often been said that an outfielder ought to pay to be allowed to play on a team. An outfielder must be a great judge and catcher of line drives and fly balls. He must be a good fielder of ground balls as much so as an infielder. If he ever misses a ground ball the only thing that backs him up is the fence or the next county line. Not so with infielders. Of course the infielders have a great many more plays and signs to be on the lookout for, than do the outfielders but the outfielders have one or two very important duties to perform under certain conditions as follows.

One of the most important duties of the outfielder is to know the proper base to which to throw the ball. To bring out this point, I will recall a

game that I played in and being young in the game I made a sad mistake.

The game was close and we were the visiting club. The score was 3 to 2 in our favor. It was the ninth inning. Two men were out. The tying run was on second base. The next batter hit a sharp single out to me in center field. I fielded the ball cleanly and thinking I was in close enough to cut the tying run from scoring and win the game, I made a good throw to plate but the run scored and that tied up the game. The batter went to second base on the throw into the plate. This put the inning run on second base and the game tied up. The next batter also hit a single and won the game.

After the game the manager called my attention to the fact that had I thrown to second base instead of to the plate, I would have held the winning run on first base. There would still be a chance for our team to score in another inning. It would take another one or two hits to have scored the runner from first base.

Another throw that is scoffed at is for an outfielder, especially center or left fielder, to throw to third base on a batted ball trying to catch the runner already on first base who is darting for third base. There is a doubt whether the throw can catch the runner at third base, but if the outfielder will throw to second base, this will keep the batter from running to second base, and holds him on first base. Now an infield batted ball might develop into a double play and most of all a single will only score one run, but had the batter been allowed to go to second base, by the throw to third base, two scores would result from a single.

Another sensational feature about the outfielders is the shifting of the players for different plays. The most outstanding one is when the club is at bat with the winning run on third base, last half of the ninth inning. No one or one out. A long fly will score the winning run.

The outfielders shift in far enough so as to cut down any line drives and field any fly ball. After catching the ball they are in close enough to cut down the runner on third base from running.

The judgment of the distance of the shift in towards the plate is up to the outfielder. We will say that the outfielder can covery forty feet to his right and left and in and back. The back edge of the circle is the peak of his throw to the plate, possibly 180 feet from the home plate. From this 180 feet he walks in forty feet, cutting his throw to 140 feet. Now from this point he can cover forty feet in all directions and any ball he catches now, he will be in position to throw the runner out trying to score from third base.

Handling of Ground Balls by the Infield

By G. S. Lowman

Written for the Wisconsin High School Bulletin

FUNDAMENTAL or starting position—When there is no man at bat, the infielder may relax and walk around, but when the batter steps in the box, the infielder should take his position and be alert to every movement of the batter. This fundamental position is with feet apart and in a line, hands on the knees, and with the weight of the body slightly on the balls of the feet. This is necessary in order that the infielder may get away to a quick start on any ground hit. The weight of the body should not be too far forward, otherwise the fielder would only be able to start forward and would have to recover his balance in order to go to the side. His position and balance must be such that he can go forward or start readily to either side. Covering ground on the infield is being in position to start quickly. A man can not get under way if he is sitting back on his heels with his arms folded.

The relation of the body, feet, arms and hands in handling ground balls—As a rule an infielder should not set himself with his heels together in handling a ground ball, but should keep the body fairly erect until the ball is near at hand, then bend largely at the hips with the back well over, slight break at the knees, and feet well apart. If the batter is a right-hander and if he goes up on the ball or to the left, his left foot should be slightly ahead with a wide base. With feet apart, and the bend largely at the hips, there is less time in recovery. The ball may be taken on either side or easily in front or well back between the legs if the hop has been slightly misjudged. With the left foot ahead, the fielder can swing or double step into position to throw as he is coming up, where if he should squat with heels together, time is lost in coming up into position to throw and an extra step must be taken, and again, it is not policy to set for a ground ball with heels together, for the ball may take a bad bound and the fielder will lose it altogether. There are times, however, when an infielder may be justified in setting himself with heels together for speed balls which hold the ground.

Proper foot work marks a superior infielder. Not more than one step should be taken after handling the ball. Double stepping brings the player into position to throw as he comes up, saves time, and the shift of the feet helps in getting more behind the throw. In early season, men should not be permitted to throw flat-footed, the arm is not in condition. It would be better for the fielder to come up and shift his feet on the throw. This will save the arm. Unless a man is naturally a side-arm thrower, it is best to keep the throw overhand.

In the handling of the ground balls, the hands should be well together with the fingers pointed downward. The arms and hands should not be held rigidly, but as the ball comes into the mitt the hands and forearm should give slightly with the bound. Men who double step get very proficient in this and are in position to throw without any extra arm motion. However, the infielder should not over-exaggerate or draw the arms and hands back too soon or he will be dropping or fumbling the ball. As a rule men who handle ground balls with heels together are stiff-armed fielders.

The place to handle ground balls—The infielder should watch the bound, and try to get the ball near the middle or latter part of the arc cut by the bounding ball, or he should get the ball on the pick-up, that is, taking the ball close to, and as it leaves the ground. Taking the ball at the top or highest point of the arc is not bad especially on high bounding balls.

A variety of balls should be batted

(Continued on page 47)

The Decline in Amateur Baseball

By Arthur S. Fox
Baseball Coach, Williams College

AMATEUR baseball in western Massachusetts, and generally throughout the East, the writer believes, is in an alarming state of etherization, and unless given plenty of fresh air and aroused may remain in this coma for too long a time. The interest and spirit have been dormant quite long enough, and if the right inoculation is administered at this time, amateur baseball can be brought back to life and a rapid recuperation will follow.

If the various sports were graphed over a period of years, no doubt all would show a rise during the periods of their popularity and a fall while on the wane. Lovers of the great national game will be reluctant to admit that baseball has dropped to an alarming degree. However, those of us who make a study of these sport situations realize that baseball, although not at the zero point, is at the freezing point, and would welcome the heat of a million breaths to give it a new and rapid rise to new mercurial heights.

This task (and it is going to be a task, to the fullness of its meaning) can only be accomplished by starting at the bottom; that is, with the boys.

Fifteen years ago the writer recalls that the parting words at night of every boy was, "See you on ball field in the morning." Boys couldn't get to school quick enough in the morning "to choose up sides" or to play "one 'ole cat" until enough came to have two teams. Saturdays were devoted entirely to playing baseball among the boys themselves or in meeting teams from other parts of the community. Sundays were more devout then and the parents had not been educated to the fact that a game of baseball was more beneficial to youths on a Sunday than spending it in idleness or for the youth to seek his own diversions, which were sometimes questionable as to their degree of values. However, the game was played even on a Sunday and in the "Sunday's best." Any available spot was used for a playing field, cow pastures with their undulating surfaces, or the likes.

During the summer months the boys would not give up baseball. True, many of the boys sought summer employment at the golf links or in any other line of endeavor which would produce some sort of a financial reward. But at the conclusion of such occupations the boys would meet after dinner and still participate in a game of ball. Such is not the case today. Baseball has seemed to have lost that magnetic appeal and has been made secondary to movies, gambling, drinking, etc. It would have been thought suicidal to make such an accusation a few years back, but now the youth revel in being classed as breakers of the law and getting away with it, as it is said in the vernacular. These specifications, understand, are general and, of course, have their exceptions. These incidences are merely to cite the paramount interest everyone once had in amateur baseball only a few years ago.

Today one may see a few boys passing a ball amongst themselves on the schoolgrounds in March. When the latter part of April comes only the representative school team is playing. Occasionally the school is not represented, owing to the fact that the coach is not a baseball man and hesitates to start a school nine for fear of his own personal embarrassment. Playing fields, it is true, have given way to real estate adventures, and if a boy were to attempt to play ball in an open field today he would be driven off by the owner. Thus one may see that perhaps the youth is not altogether to blame for his disinterest in baseball.

The writer of this article has had the pleasure of speaking on several occasions of late concerning amateur baseball and its revivification. Although with no intention for newspaper publicity, his talks have been reported in certain papers. As is always the case, some critics who hide behind the garb of a nom-de-plume find pleasure in disagreeing with such seemingly adamant statements. One in particular took haste to call attention to the great number of college men who travel from collegiate ranks to the professional fields of baseball. Admitted, but what of their calibre?

Are there any Ansons, Keelers, McGraws, Matthewsons, Walshs among these? College men have the advantages of playing fields, equipment, and professional coaching which the younger boys do not have. How does one account for the fewer sandlotters going into the majors today, disregarding the fact that college men are educated into a more organized theme of thought and execution, which qualifies them more readily?

The same critic called attention to a sporting headline that seventy-three men reported for try-outs at a certain large Eastern college. *Quality*, not *quantity*, is what the coaches desire.

Another Washington newspaper critic mentioned that it was safe to bet, as long as a certain college team continued to turn out a team of jerseyed huskies in the fall the alumni would not be much concerned about baseball. As my baseball captain remarked today, "With the advent of professional football, college football is doomed for a fall and the college man will have to devote his athletic effort to a struggling game of checkers, dominoes or squash in the very near future."

As the old adage says, "Go west, young man, go west." Again the West has taken the forward step over the East in making a comprehensive and exhaustive study of the amateur baseball situation and has not sat on the fence criticising, but has set about following the general lines of the American Legion plan in organizing boys' leagues. Every real American boy has in him an inherited zeal for reward; not monetary, but valueless honor, glory and fame. What greater reward is there to a boy than to be on a championship school team, a championship state team, or a national championship boys' team? Do aspirants for Olympic representation desire monetary awards? The way in which the majority cling to their amateur standing would make us believe that it is just this honor, glory and fame. And so we, as honest, uprighteous and foreseeing Americans, must look forward to the perpetuation of amateur baseball.

We in the East must spend the time, patience and untiring energy as the West has done in organizing such boys' teams in the community, town, county, and state.

As the veteran baseball scribe John B. Sheridan writes, "How often does one read of late of summer schools for coaches in football conducted by Rockne, Zuppke, Dobie, Stagg, Yost or Roper. Anyone hear of a summer school for baseball coaches?" Continuing he said, "Every endeavor except baseball has a recognized authoritative literature which will assist the young players to learn the correct fundamentals. One may read some booklets put out by certain sporting goods houses on 'How to Play Base-

ball,' but all of these proceed to instruct the player in tactics and strategy of the game—things that can be applied only by advanced players."

In brief, may I ask all the readers of this article not to sit on the fence, but get busy. Representatives of any civic organization should call a meeting of all the boys in their community, tell them the plans of organization and operation, write to the American Legion at Indianapolis, Indiana, for the rules of entry and participation. *More power to you.* Entries of all the teams must be in not later than June 1st. You owe this contribution to baseball. Do not delay.

In closing, may I further ask that we improve the standards of play in baseball, as standards of play in other games, by the creation of a literature on "How to Play Baseball," and finally by instituting a school to teach the teachers who are to instruct young Americans in the best methods of play.

Until these things are done I see little hope for improving standards of amateur baseball play to the same degree as standards of play in other amateur games have been improved.

History of Baseball in Detroit

By Clifford Gracey
Western High School

THE history of baseball in Detroit schools takes one back to the years before 1900. The first school to play baseball was the Detroit School for Boys, located on the triangle by the Miles Theater. The second school was the Detroit University School, located on East Jefferson. These two private schools had strong baseball teams, and played against each other. Central was the third school, which became noted for its fine football teams, but did not take part in baseball until 1901.

Western High School started as a part of the old Webster School, and started to play baseball in 1897. In 1898 the first unit of the Western High School was built, and in that year the first Athletic Association of Detroit was organized. Eastern High was built a few years later. They, too, joined the newly organized association, and these five schools were known throughout the state as the "Big Five." This organization was very crude, but it served as a medium for the discussions of baseball problems. However, no school felt bound by its rules. Each school was a law unto itself.

The rules governing sports in these early days were few, and only partly lived up to. There was no age limit, and anyone connected with the schools could play. The janitor from one of these schools pitched on one of the championship teams. A student could compete for several years, and many times students went to one school and played on the team of another school. This was often done when any Detroit team played one of the state schools.

The Board of Education made no provision for baseball, and each school raised money by giving parties, ice cream socials, and other social functions. There were no gymnasiums; the boys dressed in the storeroom, toilet or engine room. Few teams had a coach, and seldom did the boys of one team have the same kind of uniforms. Each boy had to buy his own uniform. The boys were older, as a rule, and much larger than they are today. The teams did not limit the competition to other high schools. Many independent and professional teams were played. On one occasion Western High toured Canada, playing eight professional teams, coming home undefeated.

Baseball, like other major sports, has undergone many changes, with which Detroit high schools have kept pace and baseball has been elevated to its proper place among the various activities. It has taken many years to educate the players and followers of baseball away from the idea that a baseball game was a signal for a "free-for-all" a place to express all the "wise-cracks"; and a place to heap abuse upon the umpire. These days are gone; in their place has come a different spirit towards baseball. One of the things that has done much to bring about this change in spirit has been our centralized supervision. With the introduction of this system ten years ago, under the able direction of Mr. Post, the spirit of all forms of athletics has been steadily improving. The days when players and coaches had to fight for school rights are gone. School disputes and all athletics are taken care of by the central office. Never before in the history of Detroit high schools has it been so pleasant for officials to work games, for coaches to work with boys and for boys to play baseball as it is today, and the spirit in which baseball is played is getting better each year. Baseball as it is played today in the Detroit high schools is a fine medium, through which boys may be taught true sportsmanship, proper respect for officials and coaches, and the right kind of school loyalty for those things which foster, encourage and help our great national game.

With the development of baseball in the high schools has come a keen interest in amateur baseball in and around Detroit. Just as high school baseball has become more highly organized and put under a central authority, so amateur and semi-professional ball have undergone many changes during the past twenty years. Back in the years before 1915 there was little effort to organize amateur ball. There were many sandlot teams playing ball, but each team played how they chose, whom they chose, and when they chose. The general public manifested little interest in the game.

In 1915 Mr. Geo. Moran, Mr. Wirt, and Mr. Zederland and some others, interested in baseball, undertook to organize amateur baseball in Detroit. The organization was known as the Detroit Amateur Baseball Federation, and its aim was to foster and encourage better baseball in Detroit. A number of teams were organized with definite schedules, and the various teams were divided into four classes according to age. That same year an umpire's organization was started known as the Detroit Umpires' Association. Due to some internal difficulties, this umpires' association split in 1919 and today Detroit has two well organized umpires' associations. The new branch was called the Detroit Federation Umpires. Both associations hold regular schools for the training of umpires. These men have been a great aid to amateur baseball in Detroit.

In 1925 a new league known as the Detroit Recreation was organized. In 1926 an amalgamation of the two leagues took place. This new and present organization is known as the Municipal Athletic Commission of the City of Detroit. The object of this commission is to foster, organize, and

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College Track and Field Stars

Some of the outstanding track and field athletes in the colleges have made creditable records in the early meets.

By John L. Griffith

IN THE April number of the ATHLETIC JOURNAL an attempt was made to list some of the leading 1928 college track and field men. The men mentioned in that article were those who had shown prominence in the indoor meets in the east, middlewest and Pacific Northwest. This article will call attention to some of the men who have attracted attention to themselves by their performances in other sections of the United States.

California

California is the great track state in America as judged by the fact that more great performers are developed in track and field athletics in this state year after year than in any other state in the Union. Teams from the California universities have won the outdoor I. C. A. A. A. A. meet with such regularity in the last six years that their victories have almost become monotonous. Athletes from California institutions won forty-four points in the 1924 Olympic Games and the indications are that men trained in the schools and colleges of this state will win their share of points in the games at Amsterdam this summer.

Dink Templeton's Stanford team is made up of a number of men of championship calibre. Spencer ran the 440 in the University of Southern California dual meet in 48.6. McKinnon won the mile in 4:27.8, Nichols the high hurdles in 15 flat, Krenz put the shot 48 feet 10 inches and threw the discus 147 feet 4 inches in that same meet. King has high jumped 6 feet 4 inches, Zombro won the broad jump in the meet at Los Angeles at 24 feet 3 inches and Edmonds has vaulted 13 feet 6 inches.

Dean Cromwell's University of Southern California athletes that have so far turned in excellent performances are Borah, who has run the hundred in 9.8 and the 220 in 22.4, Gloege won the half mile against Stanford in 1:55.6 and Woodruff the two mile in 9:47.8. Payne, the national interscholastic hurdling champion, has run the low hurdles in 23.8 and is also good in the high hurdles. Barnes, the last Olympic champion, who has vaulted 13 feet 9 inches in the past, has already vaulted 13 feet 6 inches this year, and Williams, the national interscholastic champion, has vaulted 13 feet.

Walter Christie, one of the veteran track coaches in America and a man who has developed more than his share of champions, for the first time in a number of years does not have a great number of outstanding stars. Irving Phillips, who last year threw the discus 144 feet and has already thrown it 140 feet this year, is one of Christie's best. Possibly other men will develop, as the big meets are held.

Rocky Mountain District

Dan Beattie of the Colorado Aggies has put the shot 49 feet this spring and has also shown promise in the hammer and discus. Beattie is a youngster and should grow better with experience.

Haines of Denver University, who won second place in the 440 in the N. C. A. A. meet last year and who has been credited with a 48 quarter, is fast enough to run in any competition.

Rowe of Brigham Young University has a record of 23.3 in the low hurdles.

Other outstanding men from the Rocky Mountain College Conference are Pilling, Utah University, who has thrown the javelin 196 feet 8 inches; Huffman, Colorado Aggies; Sarcander, Colorado College, both of whom have vaulted close to 13 feet; Burke of the Utah Aggies has run the mile in 4:25.2, Albers of Denver University has run the hundred in 9.8, and Brewer of Colorado Aggies has vaulted 13 feet ¼ inch.

Track Athletes in the Southwest

By Clyde Littlefield

TRACK and field athletics have developed very rapidly in the southwest. The improvement has been noticed more in the last five years. This development has been due to the increased interest in high schools, with better coaching, favorable climate conditions for training, and coming in contact with other sections of the country where results have always been outstanding.

The Relays in the southwest, midwest and other sections have helped wonderfully to bring about the success of individual track men. All the Relays have developed a keen competition, and therefore made a change for improvement each year.

The southwest has been sending its share of men to National High School meets and N. C. A. A. meets each year. From this competition and association, there has developed an educational help in track and field athletics in this section of the country.

The Southwest Conference is composed of seven members. All of these universities are improving track. This year is no exception, and from the equipment found at each institution, this branch of athletics will continue to be on a par with other sections.

From the results of the Texas and Rice relays and a few other meets this year, we find the competition has been good. There is found at each institution in the Southwest Conference a few outstanding men.

The University of Texas has won five straight championships, and this season has a few outstanding men. In Baldwin they have a good discus man. He has made 150 feet 8½ inches in competition this season and has put the shot 46 feet 6 inches. Haggard and Shepherd are two good high jumpers. One holds the national collegiate record and the other tied in the N. C. A. A. meet last year at 6 feet 5½ inches. Captain Smith has made 23 feet 8 inches in the broad jump, and has thrown the javelin 190 feet. Hammond holds the conference record and has made 13 feet. Daniels runs the quarter mile in 50 seconds and better. Hargis, another weight man, puts the shot 46 feet. Blanton can do two miles in 10 minutes or better.

The Texas A. & M. has its best team in recent years. The mile relay team showed itself at the Rice relays by defeating Iowa in the good time of 3 minutes 21 seconds. O'Neal can run the quarter in 50 seconds or better. In Kennedy, the team has a great hurdler. He made 23.8 seconds in the 220 low hurdles and 15.5 seconds in the high hurdles last week. He is also a member of the mile relay team. Buck, their dash man, made 10 sec-

onds in the hundred yards and 22 seconds in the 220 yards, in the last meet. Thompson runs the half in two minutes or better. The Aggies won the 880-yard relay in the Texas and Rice relays, the best time being one minute twenty-eight and four-tenths seconds.

Rice Institute has one of the fastest sprint men in college today. Bracey made 9.5 seconds in the Texas relays and 9.8 seconds in the Rice relays. He looks like one of the best. Rice has Brunson in the half and mile runs. He made the half mile in 1 minute 58 seconds, and the mile in 4 minutes 21 seconds last year, and is looking better this year. He is the anchor man on the four-mile relay team. He defeated Ohio in the relays. Willis won the 1500-yard run at the Illinois Indoor Carnival this year, and is a member of the four-mile team. Chitwood, another member of the four-mile team, can run the two mile under 9 minutes 50 seconds. He made this time last season. Cabiness, the Rice vaulter, made 13 feet in the Rice relays.

Southern Methodist University has their largest squad out this year. Herman, the javelin thrower, made 191 feet in the Texas relays. He made 200 feet his last year in high school and should do as well this year. Brown is the holder of the conference record in the 220 low hurdles, with the time of 23.7 seconds. He is going good again this season. Biggs, S. M. U. quarter miler, is doing 51 seconds in the quarter. Hooks, their shot putter, is making 44 feet. In Davidson, they have a good all around man, and he is in training for the decathlon. S. M. U. is building a $10,000 track in the stadium at the present time.

Baylor University has a few outstanding men. Parks can vault 12 feet 6 inches. Mitchell throws the discus 135 feet. Noble has thrown the javelin 175 feet. Bain runs the quarter in 51 seconds.

Texas Christian University has a one-man team in their good sprinter, McCorkle. He ran the 100 yards under 10 seconds several times last year and won the conference 220 yard dash in 22 seconds.

Arkansas University is one of the coming teams in the southwest this year. Tom Pickel has developed into a 45-foot shot putter and 135 feet in the discus. Quenton threw the javelin 180 feet. Captain Tilmon ran the high hurdles in 15.4 seconds and the low hurdles in 24.4 seconds. Gresham made 4 minutes and 32 seconds in the mile. Armstrong made the 220-yard dash in 22 seconds last week.

From the early results, the southwest should be able to produce some men for the N. C. A. A. meet, and for the Olympics this year.

The National Interscholastic Basketball Tournament

By N. H. Norgren
University of Chicago, 1928

THE outstanding feature of the 1928 National Interscholastic Basketball Tournament was the employment of more systematic plans of offensive and defensive team-play. Having observed the last eight tournaments, I was especially impressed by the similarity of methods used by the teams from the various sections of the United States to play the ball into the set five-man two-line defense for close-in shots at the basket, and the general use of the zone plan of this set defense. The delayed or deliberate offensive strategy, a natural outgrowth of the endeavor to maneuver the ball through this set five-man defense formation, was used by practically all of the teams. This feature of play was aptly stated by one of the contestants of a defeated team, when he said that the reason his team was defeated was because "the other teams play by system, while my team just played."

The problem for the teams that were defeated in what are termed "up-sets" seemed to be that of encountering methods of defense which they had little or no experience in meeting rather than a change in the offensive play of their opponents. Such a problem played a considerable part in one of the first "up-sets" of the tournament when Carr Creek, Kentucky, defeated Austin, Texas. Until this game Carr Creek had defeated the United States Indian School of New Mexico 32 to 16, and Austin had lowered the colors of Englewood, Chicago, 29 to 25, scoring thirteen field baskets to eleven. For this game Austin was easily the favorite team by virtue of its splendid record throughout the season, while the ability of Carr Creek was at that time a matter of question. It was apparent that Austin's offensive maneuvers had been developed mainly for a set five-man, two-line formation. The guards brought the ball down to the center of the court, more or less leisurely, passing it into their tall center at the middle of the free throw line or to one of the forwards opposite the free throw line at their respective side of the court, when they attempted to pass and drive into the basket for a shot. Defensively, they played a set five-man formation, zone employment.

Carr Creek used a man-to-man defense over the court, each player playing a given opponent wherever he was. The result was that Carr Creek's forwards who were speedy, quick and shifty checked Austin's guards well up the court, while Austin's center and forwards maintained their positions on and opposite the free throw line covered by the other Carr Creek players. Since Austin's forwards did not move up the floor to shorten the distance between them and the ball, their guards resorted to long passes which were intercepted, for the most part, by their opponents. When the guards did play the ball to their center the distances had been lengthened so that the forwards and guards could not time their movements effectively on the ball as they had been in the habit of doing against the set defense. Austin, a team with a reputation for heavy scoring, was held to seven field goals, while Carr Creek made twelve.

This victory followed by another win over Bristol, Connecticut, placed Carr Creek as one of the dangerous teams in the meet. Their man-to-man defense, which helped to upset their opponents so far, however, was to be the defense that the offensive play of their next opponents was best suited for. Vienna, Georgia, runners-up in the 1927 tournament, and the favorites for the championship this year, is a team of tall, well-built, fast, clever players, who specialized on speedy offensive breaks accompanied

by clever passing and excellent basket scoring. Defensively they used a set five-man formation, zone employment. Although with considerable difficulty, Vienna was able to use their offensive tactics favorably against the man-to-man defense and eliminated Carr Creek, 22 to 11, scoring eight field goals against three for their opponents.

Vienna's next contest was with Ashland, Kentucky, who had won three games in decisive manner playing a deliberate offensive game and a set five-man defense, zone employment. This team was efficient in defense, individually and collectively, as well as being effective short and long shots at the basket. They played a deliberate game offensively, never losing the ball unless through definitely reasonable throws for the basket which might have missed scoring, and presented to their opponents, at all times, a compact defense. As a result Vienna rarely had an opportunity for a fast break and were forced to attempt to score only by maneuvering through a set defense. This plugging away did not prove as inspiring to Vienna as fast breaks seemed to be in the earlier game. They did, however, score nine field goals to eight for Ashland. But Ashland committed only one personal foul to five for Vienna. The losers, also, were using a set five-man defense, zone employment, and their three front-line men drew back to points within a few feet in front of the free throw line. This proved costly to them for Ashland threw three baskets from out in front of these first line defensive men.

The boys from Canton, Illinois, had fought their way to the finals for the championship by playing a steady deliberate game. None of their opponents had scored more than nineteen points while they made twenty-eight points in one game and not more than twenty-three points in any of the other four games they played up to the final game. Canton employed a deliberate offense, but would break fast when there clearly was a sure chance to do so, though if there were the slightest doubt of the success of the break, they passed the ball back for a deliberate attempt to drive for the goal. Their main dependence, offensively, was to maneuver the front line of the defense so that one or the other of the guards could dribble into the defense, pivot and pass to one of his team-mates driving to the basket from behind the pivoter and obliquely across the floor. They were successful in this plan in their games up to the final one, and with clever passing and basket-shooting made their throws count. Defensively, they played a set five-man formation, man-to-man employment.

In the championship game Ashland evidently had the key to the Canton offense, for they made certain that neither of the Canton guards be allowed to drive the ball into Ashland defensive territory, and, as a result, that fine, fast driving which marked Canton's play in the earlier games was practically negligible in this contest. Yet Canton made five field goals to four by Ashland; but the boys from the bluegrass played through that exciting contest without committing a single personal foul while Canton made seven.

Many of the annual observers agreed that there was a marked improvement in the game as played by the high schools this year over that

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Fifth Annual National Collegiate Swimming Championships

By F. W. Luehring

Chairman, National Collegiate Swimming Rules Committee

THE Fifth Annual National Swimming Championships of the National Collegiate Athletic Association were held under the auspices of the University of Pennsylvania on March 30 and 31, 1928, in the new Sydney E. Hutchinson Pool. In nationwide representation, high quality of performances, number of institutions entered and number of contestants participating this meet surpassed all preceding similar meets since this annual national classic was established five years ago. The following twenty colleges and universities scattered from the Atlantic Coast to the Pacific and representing six intercollegiate leagues and conferences entered their best swimmers in the meet:

1. Armour Institute
2. Brigham Young
3. Colgate
4. Columbia
5. Dartmouth
6. Fordham
7. Illinois
8. Michigan
9. Minnesota
10. Navy
11. New York
12. Northwestern
13. Oregon
14. Pennsylvania
15. Princeton
16. Rutgers
17. Springfield
18. Stanford
19. Wesleyan
20. Williams

The United States Naval Academy team, a prominent competitor in other National Collegiate Swimming Championships, at the last moment was unable to come. Coach Ortland of the Navy and a former member of the Swimming Rules Committee, however, was on hand to act as an official, as were Coaches Nill of the United States Military Academy, Barry of Brown, MacGillivray of Chicago, and Miller of Mercersburg Academy and chairman of the sub-committee on interscholastic swimming. The executive committee of the National Collegiate Athletic Association was represented by Dr. R. Tait MacKenzie of the University of Pennsylvania and first chairman of the Swimming Rules Committee in 1913-14 and Dr. Joseph E. Raycroft of Princeton University, who presented the championship medals of the N. C. A. A. to all point winners of the meet.

The general control and conduct of the meet was vested in the Swimming Rules Committee, who also in conjunction with visiting coaches officiated the meet. There were no paid officials, and no more capable officials can be found than the swimming coaches of our colleges and universities. The detailed business management of the meet was delegated to a local committee comprised of W. S. Merriam, swimming coach of the University of Pennsylvania, as chairman; John P. Berry, manager of swimming, and Richard Rose, assistant manager of swimming at the same institution, whose efficient services in this connection and courteous provision for the comfort and welfare of visiting teams were hereby acknowledged by the

Swimming Rules Committee as an outstanding feature of the occasion. The entire meet was well operated and managed and a fine spirit of sportsmanship prevailed.

The two primary purposes governing these annual meets are (1) to get together for competitive purposes the leading college swimmers of the United States and (2) to assist in the standardization of this sport in various sections of the country. This year the meet was also designated an official tryout for the Olympic team by the American Olympic Association, all point winners being certified in the final tryouts. An interesting phase of the Olympic tryouts is the admission of outstanding freshmen and transfer students, this making it possible for any college swimmer to represent his institution in competition for a place on the Olympic team once in four years. Such first year men, however, are not eligible for the National Collegiate trophies. This year the regular eligible contestants far surpassed all freshmen and transfer men, Uihlein of Princeton being the only qualifier by winning fourth place in the 200 yard breast stroke over Nisselson of New York University, who won the fourth place medal.

The unusual character of the meet was demonstrated by the fact that five N. C. A. A. records were broken and another equaled and two new American intercollegiate records set.

Bud Shields of Brigham Young University was the outstanding individual star of the meet. This brilliant swimmer from the Rocky Mountain Conference was the only athlete to win two first places, a distinction which was further enhanced by the fact that he also established two records; the first was a new National Collegiate A. A. and American Intercollegiate record for the 440 yard free style swim of 5 minutes, 8.2 seconds. His second stellar performance comprised a new N. C. A. A. record in the 220 yard free style with a time of 2 minutes, 19.8 seconds.

Schott of Williams made a new N. C. A. A. record in the 220 yard breast stroke with a time of two minutes, 39.7 seconds and Darnall of Michigan had the distinction of making the remaining individual record breaking performance with a new N. C. A. A. record in the 100 yard free style swim of 55 seconds.

Although there was no team championship to be contested for, the University of Michigan team, coached by Matthew Mann, got the distinction of winning more places than any other team represented in the meet. Besides this the Michigan relay teams are credited with two record performances, a new N. C. A. A. mark in the 200 yard relay of 1 minute, 39.5 seconds, and a new N. C. A. A. and American Intercollegiate record in the 300 yard medley relay of 3 minutes, 18.2 seconds.

In accordance with the established

(*Continued on page* 46)

CHAMPIONS CROWNED IN N. C. A. A. SWIM MEET

200-Yard Relay — Michigan (Walker, Walaitis, Seager and Darnell).

200-Yard Breaststroke—Schott, Williams.

100-Yard Freestyle—Darnell, Michigan.

50-Yard Freestyle—Bryant, Dartmouth.

150-Yard Backstroke—Hinch, Northwestern.

440-Yard Freestyle — Shields, Brigham Young.

220-Yard Freestyle — Shields, Brigham Young.

Fancy Diving—Colbath, Northwestern.

300-Yard Medley Relay—Michigan (Hubble, Thompson and Walker).

The High Jump — Eastern Style

C. H. McCloy

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A DISCUSSION of the high jump must naturally be divided into two parts, one part discussing the Eastern style and the other the Western style. While the mechanical principles of the two are approximately the same, the application is widely different.

In the Eastern style there are a number of sub-styles, but they are so similar in their form that they can be discussed together. In the following discussion of the mechanics of this type of high jumping the subject will be divided into three parts: The Approach, The Rising to the Bar, and The Form Over the Bar. The discussion will be limited strictly to the mechanics involved and will not attempt to discuss training procedure. In the presentation below it will be assumed that the athlete jumps from his left foot.

1. The Approach

In general, there have been two different types of approach as to direction. In one the jumper has endeavored to move straight across the bar and in the other he has crossed the bar diagonally. This classification should not be confused with the direction of approach; for one who runs toward the right standard and swerves to the left in the last two or three steps very frequently goes almost straight across the bar rather than across diagonally. Theoretically, going straight across the bar is more advantageous than going across diagonally. The reason for this is that the bar in this case can be thought of as a matter of only an inch or less in width. In the going across the bar diagonally the jumper must pause in the air slightly longer between the time he crosses the nearest part of the bar and the time that he crosses the farthest part of the bar. This is illustrated in Figure 1. Frequently it is best to make a slight swerving motion to the left on the last step or two in order to cause the body to begin a slight rotation in the horizontal plane. This results in the whole long axis of the body crossing the bar almost at the same time, as in the Western style, except that the face is in the opposite direction. This is pictured in Figure 2.

The speed necessary in the run is an important consideration. It should be just fast enough to cause the body to go over the bar without coming down upon it. With this in view, the athlete who goes over the bar with the long axis of the body at right angles to the bar must move a little faster than the one who goes over the bar with the long axis of the body parallel to it. This will be seen readily from Figure 1 and Figure 2, but the mechanics of the matter deserves further consideration.

In jumping from the ground upwards, the height will depend upon the initial velocity from the ground according to the formula $h = \frac{V^2}{2g}$ in which h is height, V is velocity from

the ground, and g is gravity. If we know the height actually jumped by the center of weight of the man (approximately the height of the jump minus the length of his legs, which may be taken for a six foot jump by an average jumper, as approximately three and a half feet) we can then compute his initial velocity. In this case it would be 14.96 feet per second at the time he left the ground.

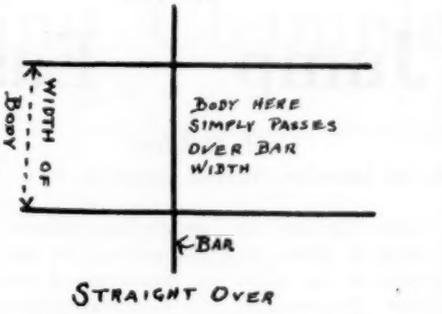
The next step would be to ascertain the acceleration necessary to attain this velocity. A like formula will give this where $a=\frac{V^2}{2s}$ where a is acceleration and s is the distance over which the force is applied. If we consider that the jumper has a difference in level of one foot from the lowest part of his crouch to the time when he leaves the ground, the acceleration would then be 112 feet per second.

The next stage is to find the time necessary to attain this velocity at this rate of acceleration. This is found from the formula $t=\frac{V}{a}$ in which t is time. This would be, solving from the above quantities, 0.134 seconds. Obviously, if the crouch were less—say half a foot—the time would be less in proportion. It will be obvious to anyone that the important time to apply the force to attain height is when the center of the weight is approximately over the foot; hence if we should assume that we wanted to apply the force at the time when the body was moving in not more than a space of one foot (that is, while the center of weight is moving from approximately six inches behind the point of application of force to a point to about six inches in front of it) the velocity of the run in this case would be 7.44 feet per second or a rate of 100 yards in about 40 seconds. If it was desired to apply this downward force over a smaller space, the velocity would be proportionately less. It will be seen by this that the faster the run the greater must be the acceleration of the jump because of the fact that the *time* must be shorter. This raises another important issue.

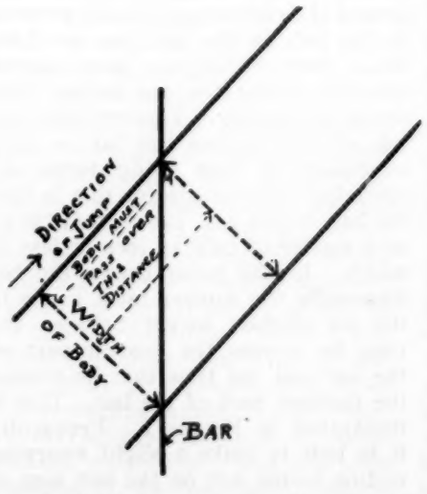
A high jump is a matter strictly of acceleration from the ground, as anyone will remember from his high school physics. The force of the acceleration varies directly with the square of the velocity according to the formula $F=\frac{V^2M}{2s}$ in which M is the mass of weight of the body. But the performance of the jump is dependent upon the amount of *power* just as the velocity of an auto is dependent upon the horse power of the engine. *Power* is the *time rating of doing work* and its formula is P=FV, but since the force varies with the square of the velocity, then the power would vary with the square of the velocity times the velocity, or with the cube of the velocity (PaV^2V aV^3).

Now, in the human engine the possible velocity is limited by the neuro-muscular reaction time limit and additional training influences this but little. Force, however, depending upon strength of the muscle—according to the all or none theory, largely a matter of getting more muscle fibers into action and causing them all to hypertrophy—can usually be increased to no small extent. There are, however, hereditary limits placed on this factor. Reverting to the formula above, it can be seen that if there is sufficient amount of strength to attain to a higher rate of acceleration that the run may be faster or the crouch may be smaller, but an individual whose strength is relatively small, and whose potential neuro-muscular velocity is great, should run somewhat lower, for according to the formula $F=\frac{V^2M}{2s}$ it will be seen that if the distance over which the force is applied (s) is *greater*, then the force may be *smaller*, as the two have a reciprocal relationship. Of course, the crouch should not be so deep as to get past the leverage point where the muscle has no further advantageous application of force. This crouch factor is a matter worthy of considerable study and experiment.

FIG. 1



STRAIGHT OVER



OVER DIAGONALLY

Fig. 2

II. Rising to the Bar

This part of the jump is based *essentially* upon a knowledge of the law of action and reaction. This, it will be recalled, is simply the fact that action equals reaction in quantity. There is in the high jump, however, two types of application:

One. When the jumper leaves the ground his action is downward—his reaction is upward. The force upward is equaled by the force downward, and if he were doing the jumping upon a platform of a very sensitive weight scale the pointer of the scales would indicate vastly increased weight, which is, after all, simply the downward thrust, whether of the weight of the body or the force of gravity. Since in a high jump the earth or the floor moves but an infinitesimal distance due to the downward thrust, the observable change of direction is all upward. Hence the force of the action plus the force of the reaction is all transmitted into the upward jump.

Two. Another type of action-reaction relationship is seen when the body has no point of support on the ground. In this case action in one direction will be counter-balanced by reaction in another. This can be roughly illustrated by lying on a slippery floor on one's side with the thighs flexed forward and the fingers touching the toes. Suddenly extend the legs and arms and not only will the feet move downward and the arms upward, but the hips will move in the opposite direction and there will be two points which will be roughly moving centers of rotation, one about the middle of the thighs and the other at about the level of the base of the sternum. In the high jump this takes place with almost every movement. For example, if a leg which has been raised high in the air is suddenly swung downward the head will tend also to move downward but the hips will move upward. These two principles will both be utilized in the discussion below.

Upon leaving the ground in rising to the bar, the right leg should be

swung upward as high as possible while the jumper is still in contact with the ground. There is usually adequate strength to do this. Kinesiologically speaking, one should not neglect the reciprocal relationships between the hamstring muscles and the ileo-femoral ligament of the other leg. The ileo-femoral ligament will not permit the leg to be moved much behind the head of the femur without rotating the pelvis backwards. On the other hand, if the hamtrings are at all short, as the right legs wings forward and upward with the knee almost straight, the pelvis is apt to be rotated forward and upward, which will limit the downward thrust of the left leg. This can be overcome in two ways, either by stretching the hamstrings by constant practice, or by swinging the leg upward with the knee somewhat bent which relaxes the hamstrings proportionately. The former is the better way as the straight leg gives the greater leverage for the following movements.

At the time of leaving the ground both arms should also be given an upward swing. The left arm is usually swung directly forward, inward and upward until the hand is about the height of the head. As the jumper is leaving the ground usually a beginning is made of the body rotation to the left. This will necessitate the left arm swing being slightly across the center of the body and the right arm swings downward, backward, outward, and upward so that as it swings upward the little finger side of the forearm is uppermost. There should be a rather loose swinging upward of the shoulders at the same time. This puts one in a position seen in figure 3. In this upward motion the trunk is usually bent slightly backward.

III. Over the Bar

This step will describe the jump from the point of leaving the ground until the jumper alights on the opposite side. As will be seen in figure 4, the right leg is high and the hips considerably lower than the bar and both arms are raised. The left leg is hanging downwards and is fairly straight. As the right foot and calf of the leg goes over the bar, considerably above it, the body is slightly turned to the left. The right leg should now be swung violently downward *towards the ground* and slightly backwards, about the time that the bar is under the middle of the thigh. At the same time, the arms should be jerked toward the ground. The detail of the arm movement will vary with slight differences in the form of the jump. The important thing is that the movement should be, in general, downwards. At the same time the head and shoulders should be dropped downward towards the ground. This results mechanically in the action downward of the legs, arms, head and shoulders, being compensated for in an equivalent reaction upward of the middle third of the body. This gets the hips clear of the bar and at this point (see Figure 4) the position of the body over the bar is like that of a bow with the concave part downward.

The danger now is in having the shoulders displace the bar. Hence at this point the right leg should swing violently upward with a slight left circumduction (if a clock face be upward, facing the foot, the circumduction would be counter-clockwise). This circumduction results in a further turning of the *trunk* so that the left shoulder is rotated away from the bar upward and to the left and the *upward* swing of the leg results in a reaction *downward* of the middle third of the body, which has crossed the bar, and a reaction *upward* of the head and shoulders.

The left leg, during the downward swing of the right leg, has been swinging upward to the right of the body across the bar and with the second and upper swing of the right leg the left leg should be dropped downward toward the ground, which will tend slightly to an upward reaction of the body adding a small amount to the height of the jump or to the clearance of the shoulders. After the shoulders have cleared the bar the athlete may make any movement he pleases in order to land without strain.

Fig 4

Fig. 3

There are, as above mentioned, a number of varieties of this form. In the one in which the body is given a slight left horizontal turn so that the body crosses the bar with its long axis forming an acute angle with the bar (the forward movement, however, being straight across the bar) these swings of the right leg and movements of the left leg and arms must be much quicker and closer together and will be accompanied by a violent bending of the head and shoulders away from the bar coincident with the final upward movement of the right leg.

It perhaps should be made clear that the first downward movement of the right leg is usually made with the left rear of the body toward the ground, the bringing up of the left leg turns the body, due to the angular reaction, still further around so that as the left leg crosses the bar the left side is almost directly towards it and the right leg is, of course, still towards the ground and decidedly across the median line of the body. With the final upward (and from the standpoint of the body, backward) swing of the right leg the slight circumduction turns the chest towards the bar. The shoulders and arms at this time must, of course, be jerked away.

The above mechanical principles will hold good with any of the variations of the Eastern form. The detailed application will vary slightly. The important thing is that an understanding of these principles will enable the coach to do that thing which is most desirable, namely, adapt the form to the individual. Differences of strength and velocity relationships will change the speed of the run and the amount of crouch. Incidentally, the crouch is affected also by the height of the knee cap, the more prominent kneecap giving greater leverage and allowing a deeper crouch. Relatively short hamstrings will modify the upward swing of the right leg. General limberness and agility to make the necessary movements in the air will determine whether one is to use the straight approach or the curving approach and whether one is to use the straight over jump or the jump in which the body forms an acute angle to the bar. There is a reason for each of these variations of form and it is not particularly difficult to apply this mechanical knowledge to building up an optimum form for any particular individual.

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The Wrong Idea of the Modern Physical Education Program

THAT the interscholastic and intercollegiate athletic program has nothing in common with the general physical education program in the schools and colleges is an idea that has developed from several sources. Those who hold this opinion suggest that the sole idea of inter-institutional athletics is the winning of games. Of course the same objection might be made to intramural athletics. Very few boys play games for exercise. They play for the sport and for the thrill which comes from putting forth their best efforts in an attempt to win. Old men play golf and other games for exercise as a means of prolonging life. Boys of school and college age are not concerned with the prolongation of their lives and give this matter little, if any, thought.

Those who advance this argument usually suggest that our present school program provides only for the physically fit, while those who really need physical training most take their exercises on the sidelines. Interscholastic and intercollegiate athletics are for the superior man. For a boy to represent his school or college in athletics, he must not only be above the average scholastically but he must be far above the average physically. It is true that inter-institutional athletics are for those who are in a class by themselves. That is the function of inter-school and inter-college athletics. The varsity football coach is not employed to train those who are sub-normal. That is the job for the department of orthopedics or corrective gymnastics or perchance for the university physician. Intramural athletics are for the average boy and young man. A man who can not make scholastic grades is eligible to compete in intramural tournaments, but he is not eligible to compete in inter-institutional athletics. The boy who is not endowed by nature with a body and mind good enough to qualify him for inter-institutional competition has his chance in the milder competitive sports.

If the school or college does not provide athletic training for the sub-normal or average boys as well as for those who are superior the fault lies with the administrators of those institutions.

The great weakness with the logic and thinking of those who complain that our intercollegiate and interscholastic athletic system is wrong because in those departments only the superior men are given training is that they either directly or by inference suggest that the way to provide athletics for the sub-normal and the average man is to discontinue giving athletic training of a strenuous sort to the superior few. As this magazine has frequently suggested, a democracy will fail if it does not give consideration to mediocracies, but further our civilization will fail if we refuse to allow those who are intellectually and physically superior to rise above mediocrity.

American Football as Viewed by an Englishman

THE *Sports Mail* of London, England, February 25, 1928, carried a report of an address given by Coun. W. E. Hincks before the Leichestershire Rugby Union Referees Society. Mr. Hincks discussed rugby football as he had seen it played in America and among other things is reported as having said: "Everything in the United States is full of snap; it is all a matter of getting there in everything they do. In football it was a game of laying them out. A team was out to get its opponents out of the way. In comparison English rugby football is like a prayer meeting compared to that across the Atlantic." Mr. Hincks in describing one game in the United States which he saw, says: "Both sides had a band and the snap and quickness of the music was remarkable; the cheer leaders worked themselves up to the greatest possible state of excitement. The play was almost terrifying in its violence and there were a good many substitutes to take the places of the wounded. * * * It was simply awful when a player got the ball. On one occasion a man took the ball and two opponents went for him. They failed to tackle him but ran terrifically into each other and that caused the first two substitutes to come on. Play was continued amid the noise of cannons, bands, cheer leaders and screaming."

European people quite generally cannot appreciate the spirit in which our personal contact games are played in this country. They are somewhat of the opinion that it is not sporting for an athlete to play as hard as he can and to put everything he has into the game. Here in America we hold to the idea that a boy should block and tackle as hard as he knows how so long as he plays fairly and respects the rules of the game and the rights of his opponent. There is a considerable number of people in the United States who condemn our athletics because we do not carry on our games and sports in the same manner that the English conduct their athletic pastimes. They believe we should imitate the older countries in everything that we do. If we had followed this same procedure in the matter of organizing our industries and of working out our governmental experiments, it is safe to say that we would not at the present time be the leading nation in the world. There are some who object to the strenuous manner in which we play our games, either because they themselves are inca-

pable of participating in such rough sports as football, basketball, boxing and wrestling or because they have a false notion that if we did not play our games so enthusiastically we would perforce put more effort into academic studies, research and other activities. Of course, if this latter contention is sound, then the people in other countries than the United States that do not play their games in such a terrifying manner as it appears to Mr. Hincks do work harder than the people of the United States in other lines. The facts of this conclusion are to be questioned.

Political Codes of Ethics

THAT "the political code is distinctly lower than the modern financial or business code" is the belief of B. C. Forbes, a student of business conditions and affairs and a writer about them. Certainly the political code is lower than the athletic code. Whoever heard a politician say anything good about a political opponent? Political races are seldom run on their merit. Lies, bribery, appeals to religious and race prejudices and sometimes bombings are the stock in trade of too many of our politicians. The public pays automobile or other taxes and the money is usually spent by this or that political crowd or political boss. Some of the money goes into hard roads and other necessary improvements; some into the pockets of the contractors, builders and others who are on the inside and practically all is spent in such a way as to strengthen those in power politically.

As a people we do not object very seriously to graft in politics. We have plenty of money and it is easier to pay tribute to the gangsters and politicians than it is to protest. We laugh at the sharp tricks played by the politicians and rather glorify the man who has raised himself to a position of political power and wealth by questionable means.

Our school and college athletics have for the most part been free from corrupt politics and independent of them. Now and then a state legislature has interfered with the administration of a state university's athletics; one or two Congressmen have gained publicity by trying to force the service schools to play certain football games and there is always a certain amount of fraternity politics in connection with the election of team captains. Attention has already been called to the fact that the A. A. U. keeps its organization alive by the distribution of Olympic patronage.

Lest someone may suggest that the editor of the ATHLETIC JOURNAL is playing politics in connection with Olympic matters, he wishes it to be known that, when the Olympic Association is reorganized and the national athletic organizations are given representation on the basis of their athletic importance in the nation, if he should be offered any position of any sort in connection with the Olympic Association or the Olympic teams he would not and will not accept. He believes that political methods such as are used by Tammany Hall and in Chicago should have no place in America's amateur athletics; that governing boards should be elected and not self-appointed, and that the institutions that have erected the athletic buildings, provided the athletic grounds, hired the athletic instructors, trained the young athletes and developed the Olympic champions, should not be required to pay tribute to the officers of paper organizations.

The athletic coaches in the schools and colleges as a class are not politicians. They have succeeded when they have succeeded by hard work. They have not held their positions through political pull and consequently athletics in the educational institutions are steadily improving. Our national athletic organizations such as the National Collegiate Athletic Associaton, the National Federation of State High School Athletic Associations, the National Playground and Recreation Association and the National Y. M. C. A. are free from politics. These associations and organizations make mistakes, but their representatives are free to vote as they see fit; they are not held in line by political promises, they are free men. It would indeed be unfortunate if the political methods now in vogue in connection with our international athletic affairs were allowed to creep into our national athletic associations. It is in hopes of forestalling such a catastrophe that the JOURNAL has spoken as it has.

Baseball Ethics

A BASEBALL coach has asked whether it is ethical for a pitcher to cross in front of a base-runner ostensibly for the purpose of backing up first base and whether it is ethical for a baseman to stand on the inside corner of his base in such a manner as to cause a base runner to run wide in touching the base. Mr. Carl Lundgren, baseball coach, University of Illinois, has given his opinion on these two points as follows:

"In regard to the ethics of a pitcher running in front of the base runner going to first base, in most all cases this practice has been abandoned entirely and if a pitcher runs in front of the base runner for the purpose of slowing the runner up, it is considered unethical. Usually the base runner attempts to touch the first baseman in some manner so that the base runner can claim interference and the right to go to first base. There is a legitimate reason for the pitcher to go to first base, however, in some cases and in these cases there is no question of ethics involved—that is, with no men on bases, the ball hit to an infielder, it is the practice for the catcher to back up first base in order to handle deflected throws and possibly overthrows. If there are men on bases the pitcher should do this backing up in place of the catcher, then it would be a legitimate play and ethical, as I have stated above.

"It is considered bad policy to ask the pitcher to do too much running, however. In a ball game, covering bases and doing this particular backing up is about all the running he should do.

"It is not considered ethical for a baseman to stand on his base and make the runner run around him, unless there is a play or the likelihood of a play at the base. If it is a long hit, for instance, the first baseman should not interfere in any way with the base runner rounding first base but leave his bag and give him a clear field. This is a conference agreement, I believe, among coaches."

The Status of Physical Education In The High Schools of McLean County, Illinois

By William B. Young
Normal, Ill.

THE compilation of facts for this subject has involved correspondence with twenty-three superintendents of high schools in McLean county. Twenty-one have sent information regarding conditions relating to the status of physical education in the high schools of McLean county. The coming year, however, with its uncertainties and readjustments will make severe demands upon the strength and devotion of the many individuals who as leaders in this movement to safeguard the birth-right of America's children, must take their stand together for the continuation and enlargement of recreational facilities.

The effect of the war on the physical education movement in the United States has taught us that physical education is a good thing for every body. The reports received of recreational activities in the high schools of McLean county are indeed encouraging in their indication of increased development rather than retrenchment.

The State of Illinois has a law on physical training, which was signed by the Governor of the State on June 26th, 1915. It provides for physical training in all the public high schools of the state. But so far as I can discover, no special provision has been made for the operation of the law; no appropriation for the development of a program or the publication of a syllabus, and no resource for the employment of state supervisors, inspectors or other administrators of physical education. But despite this fact McLean county has been carrying on an intensive program in physical training.

In order to determine the status of physical education in McLean county the following questionnaire was prepared and sent to twenty-three high school superintendents. Twenty-one replied and the following tables have been arranged as a summary of these questions.

Of the twenty-one high schools in McLean county that returned the questionnaire, eighteen offer a four-year curriculum, two offer a three-year curriculum, and one offers a two-year curriculum.

The following high schools offer a four-year curriculum:

Arrowsmith High School
Bloomington High School
Carlock High School
Chenoa High School
Colfax High School
Cooksville High School
Cropsey High School
Downs High School
Ellsworth High School
Gridley High School
Heyworth High School
Leroy High School
Lexington High School
McLean High School
Normal High School
Saybrook High School
Stanford High School
Towanda High School

The following high schools offer a three-year curriculum:

Danvers High School
Funks-Grove High School

Hudson High School offers a two-year curriculum.

Table 1, shows the following facts:

1. The enrollment of 21 high schools in McLean County. The enrollment ranges from 14 in Funks-Grove High School, to 1,069 in the Bloomington High School.

2. The number of girls in high school is shown in column two.

3. The number of boys in high school is shown in column three.

4. The number of girls taking physical training is shown in column four.

5. The number of boys taking physical training is shown in column five.

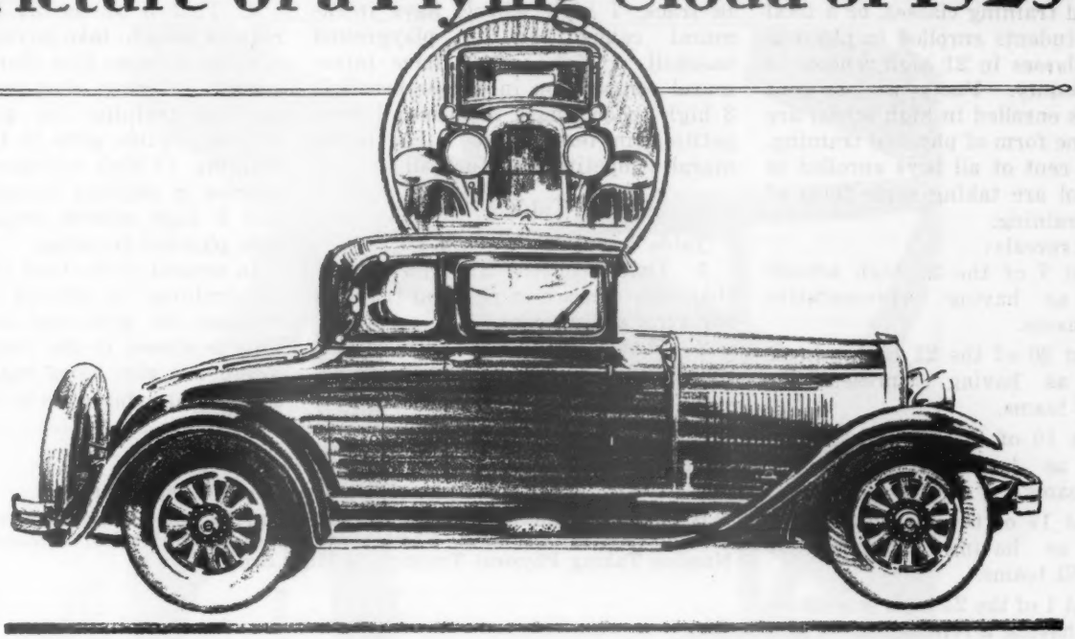
6. The total number of students taking physical training is shown in column six.

The present enrollment in 21 high schools in McLean county numbers 2,524; 1,370 are girls; 1,154 are boys;

QUESTIONNAIRE
(For High School Only)

1. Name of School.....
2. Present High School Enrollment .....
3. No of Boys in School.....Courses.....
   No. Taking Physical Training.....Elective.....Required.....
   (Check in the proper blank whether these courses are required or elective.)
   No. Taking Physical Training.....Elective.....Required.....
   (Check in the proper blank whether these courses are required or elective.)
4. No. of Girls in School.....Courses.....
   .....
   (Check in the proper blank whether these courses are required or elective.)
5. Underline the Activities in which You Have Representative teams:
   A. Football — E. Tennis
   B. Basketball — F. Soccer
   C. Swimming — G. Track
   D. Baseball — H. Golf
6. Underline Activities in which You Have Intra-Mural Competition:
   A. Football — E. Soccer
   B. Basketball — F. Playground Baseball
   C. Baseball — G. Indoor Baseball
   D. Track — H. Golf
7. Is Physical Training Taught? No.....Yes.....
   Over What Period of Year?
   Entire Shool Year.....One Term.....One Semester.....
8. Is a Special Instructor Employed or Does the Coach of Athletics Teach Physical Training .....
  L
9. What Is the Approximate Expenditure for Physical Training Each Year?....
   .....
10. Do You Have a Gymnasium in Connection with the School?.....
11. What Is the Approximate Cost of Equipment in the Gymnasium?.....
    .....
    .....
12. What Equipment Do You Have, Such As:
    A. Tennis Courts .....
    B. Ball Fields .....
    C. Track Fields .....Size .....
13. What Is the Approximate Expenditure Each Year for Athletics Alone:
    .....
    .....
14. Of What Benefit Do You Think Physical Training Is to Boys and Girls in High School?

Picture of a Flying Cloud of 1929



looking for the right kind of owner

THE Flying Cloud Coupe in the picture is afraid that it may be unhappy. It might get an owner that would not be just the right kind.

Not that this Flying Cloud is conceited. But it knows how good it is. It knows that it can show even the twenty thousand dollar kind a few things about going from here to there in this country.

So it wants an owner that will let it step out once in a while.

There's a figure on the speedometer dial quite a ways above seventy that this Flying Cloud likes to flirt with now and then.

It wants an owner that likes to go places, with smart people, and get there a little bit ahead of the rest.

Now and then this Flying Cloud enjoys loitering down a side road bathed in summer's smiles.

A high hill just makes it chuckle, and it's still looking for a mountain that it can really call a hill.

It doesn't much care whether it's on pavements or in ruts, whether the road is dry or slippery.

In fact, it wants the right kind of owner. One who gets a lot of fun out of traveling and will know it when he drives a car that feels the same way.

Perhaps you're the right kind of owner for this car.

If so, you'll know it the minute you try it out. The more miles you cover, the more sure you'll be that this Reo Flying Cloud of 1929 is your car.

But you'll have to get acquainted to find out.

So we're inviting you to come down today, just to see if you're the kind of owner this Flying Cloud wants.

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584 girls are enrolled in physical training classes; 587 boys are enrolled in physical training classes, or a total of 1,171 students enrolled in physical training classes in 21 high schools in McLean county. Forty-two per cent of all girls enrolled in high school are taking some form of physical training. Fifty per cent of all boys enrolled in high school are taking some form of physical training.

Table 2 reveals:

1. That 7 of the 21 high schools reported as having representative football teams.

2. That 20 of the 21 high schools reported as having representative basketball teams.

3. That 10 of the 21 high schools reported as having representative baseball teams.

4. That 17 of the 21 high schools reported as having representative basket baill teams.

5. That 1 of the 21 high schools reported as having a representative golf team.

Basketball is the most popular sport being played in McLean county at this time. 20 of the 21 high schools have representative teams who schedule and play games with other high schools. Track is second in popularity with 17 high schools having representative teams. Baseball is third with 10 high schools having representative teams. Football is fourth with 7 high schools having representative teams. Golf which is becoming a sport for high school boys and girls ranks fifth.

Table 3

Table 3 reveals:

1. That 1 of the 21 high schools reported as having intra-mural competition in football.

2. That 18 of the 21 high schools reported as having intra-mural competition in basketball.

3. That 9 of the 21 high schools reported as having intra-mural competition in baseball.

4. That 7 of the 21 high schools reported as having intra-mural competition in track.

5. That 3 of the 21 high schools reported as having intra-mural competition in tennis.

6. That 7 of the 21 high schools reported as having intra-mural competition in playground baseball.

7. That 4 of the 21 high schools reported as having intra-mural competition in indoor baseball.

Basketball as an intra-mural sport is again leading in popularity throughout the county. Eighteen high schools have intra-mural competition in basketball, 9 high schools have intra-mural competition in baseball, 7 high schools have intra-mural competition in track, 7 high schools have intra-mural competition in playground baseball, 4 high schools have intra-mural competition in indoor baseball, 3 high schools have intra-mural competition in tennis, and 1 has intra-mural competition in football.

Table 4

Table 4 reveals:

1. That 5 of the 21 high schools that offer courses in physical training for girls are elective.

2. That 9 of the 21 high schools require girls to take physical training.

3. That 12 of the 21 high schools that offer courses for boys are elective.

4. That 5 of the 21 high schools require boys to take physical training.

Table 4 shows that there are 5 high schools offering elective courses in physical training for girls, 9 high schools require girls to take physical training, 12 high schools offer elective courses in physical training for boys, and 5 high schools require boys to take physical training.

In several of the high schools physical training is offered in the curriculum for girls and not for boys. This is shown in the following table. There are also more high schools in county requiring girls to take physical

Table I.

Twenty-one High Schools in McLean County

High School Enrollment; Number of Girls; Number of Boys; Number of Girls Taking Physical Training, Number of Boys Taking Physical Training, and Total Number Taking Physical Training in High School.

Name of High School	High School Enrollment 1926-27	No. of Girls	No. of Boys	No. of Girls Taking Physical Training	No. of Boys Taking Physical Training	Total No. Taking Physical Training in High School
Arrowsmith	40	20	20	0	15	15
Bloomington	1069	576	493	210	243	453
Carlock	42	24	18	0	18	18
Chenoa	125	67	58	0	0	0
Colfax	84	49	35	0	21	21
Cooksville	42	23	19	23	0	23
Cropsey	40	24	16	23	15	38
Danvers	62	37	25	24	0	24
Downs	42	22	20	20	16	36
Ellsworth	26	17	9	0	9	9
Funks Grove	14	9	5	9	5	14
Gridley	43	23	18	0	13	13
Heyworth	100	58	42	37	40	77
Hudson	20	8	12	0	0	0
Leroy	146	81	65	50	35	85
Lexingotn	134	68	66	17	17	34
McLean	81	39	42	38	42	80
Norma	230	124	106	65	40	105
Saybrook	67	38	29	25	15	40
Stanford	83	44	39	43	24	67
Towanda	34	17	17	0	14	14
Total	2524	1370	1154	584	587	1171

Table II.

Activities High Schools Have Representative Teams

Name of High School	Football	Basketball	Baseball	Track	Golf
Arrowsmith		Yes	Yes	Yes	
Bloomington	Yes	Yes	Yes	Yes	Yes
Carlock		Yes	Yes	Yes	
Chenoa	Yes	Yes		Yes	
Colfax		Yes			
Cooksville		Yes			
Cropsey		Yes		Yes	
Danvers		Yes	Yes	Yes	
Ellsworth		Yes	Yes	Yes	
Funks Grove		Yes			
Downs		Yes	Yes	Yes	
Gridley	Yes	Yes		Yes	
Heyworth		Yes	Yes	Yes	
Hudson					
Leroy	Yes	Yes		Yes	
Lexington	Yes	Yes		Yes	
McLean	Yes	Yes		Yes	
Normal	Yes	Yes	Yes	Yes	
Saybrook		Yes	Yes	Yes	
Stanford		Yes	Yes	Yes	
Towanda		Yes		Yes	
Total	7	20	10	17	1

Note: Blank spaces indicate that the schools do not have representative teams.

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training than there are requiring boys to take physical training.

Is Physical Training Taught Entire School Year, One Semester or One Term?

The high schools that teach physical training, where they own their gymnasiums start supervised classes in physical training during the month of September, whether it is required or elective, and finish the last week of school in the spring. Seventy-four per cent of the high schools in the county teach physical training the entire school year, while twenty-four per cent teach classes only during the cold weather.

Schools that rent community or town halls teach classes on an average of eighteen weeks or one semester. Two high schools are not offering physical training of any sort in their curriculums. Hudson high school is without a gymnasium or hall but uses a spacious playground during the fall and in the late spring.

The following high schools, constituting 74 per cent of the total responses, teach physical training the entire school year:

Bloomington High School
Carlock High School
Colfax High School
Cooksville High School
Cropsey High School
Downs High School
Funks-Grove High School
Heyworth High School
McLean High School
Normal High School
Leroy High School
Lexington High School
Saybrook High School
Stanford High School

The following high schools constituting 24 per cent of the total responses teach physical training one semester or days equivalent to one semester:

Arrowsmith High School
Danvers High School
Ellsworth High School
Gridley High School
Towanda High School

Is a Special Instructor Employed or Does the Coach of Athletics Teach Physical Training?

The high schools who offer physical training in their curriculums are to a large extent taught by superintendents and men athletic instructors. From the data secured in the small rural high schools, the men instructors are attempting to teach the girls. Bloomington High School and Normal High School, which we may classify as city high schools, employ special teachers of physical training for boys and girls.

The superintendent of Saybrook High School writes, "The coach of athletics does all that is done for boys, while our music instructor teaches the girls." The superintendent of Downs High School states that, "The coach of athletics teaches the boys and a lady instructor teaches the girls." Fourteen high schools in McLean county employ a coach to teach athletics, physical training, and other subjects. Two high schools employ full time teachers of physical training. In four high schools the superintendents teach physical training.

The following high schools employ full time teachers of physical training:

Bloomington High School
Normal High School

The superintendents of the following high schools teach physical training:

Cooksville High School
Ellsworth High School
Hudson High School
Towanda High School

The following high schools employ a coach to teach athletics, physical training, and other subjects:

Arrowsmith High School
Carlock High School
Colfax High School
Cropsey High School
Danvers High School
Downs High School
Funks-Grove High School
Gridley High School
Heyworth High School
Leroy High School
Lexington High School
McLean High School
Saybrook High School
Stanford High School

The following high schools employ a full time teacher of regular high school subjects who devotes part of her time to the teaching of girls physical training:

Saybrook High School
Leroy High School

What is the Approximate Expendi-

Table III.

Activities High Schools Have Intra-Mural Competion

Name of School	Football	Basketball	Baseball	Tennis	Playground Baseball	Indoor Baseball	Track
Arrowsmith		Yes	Yes		Yes		
Bloomington		Yes					
Carlock		Yes	Yes		Yes	Yes	
Chenoa			Yes				Yes
Colfax		Yes					
Cooksville							
Cropsey		Yes		Yes		Yes	Yes
Danvers		Yes					
Downs		Yes	Yes			Yes	
Ellsworth		Yes					
Funks Grove		Yes	Yes		Yes	Yes	
Gridley		Yes	Yes		Yes		Yes
Heyworth		Yes	Yes				
Hudson		Yes					
Leroy	Yes	Yes					Yes
Lexington		Yes					Yes
McLean		Yes	Yes	Yes	Yes		
Normal		Yes	Yes	Yes	Yes		
Saybrook		Yes	Yes				Yes
Stanford		Yes					
Towanda					Yes		Yes
Total	1	18	9	3	7	4	7

Note: Blank spaces indicate that there is no intra-mural competition.

Table IV.

Table Showing Physical Training as Required or Elective

Nam of High School	Is Phy. Training ELECTIVE FOR GIRLS?	Is Phy. Training REQUIRED FOR GIRLS?	Is Phy. Training ELECTIVE FOR BOYS?	Is Phy. Training REQUIRED FOR BOYS?
Arrowsmith			Yes	
Bloomington		Yes		Yes
Carlock			Yes	
Chenoa				
Colfax			Yes	
Cooksville		Yes		
Cropsey		Yes		Yes
Danvers		Yes		
Downs		Yes	Yes	
Ellsworth			Yes	
Funks Grove	Yes		Yes	
Gridley			Yes	
Heyworth	Yes	Yes		Yes
Hudson				
Leroy		Yes	Yes	
Lexington	Yes			Yes
McLean		Yes		Yes
Normal	Yes		Yes	
Saybrook	Yes		Yes	
Stanford		Yes	Yes	
Towanda			Yes	
Total	5	9	12	5

Note: Blank spaces indicate that physical training is neither elective nor required.

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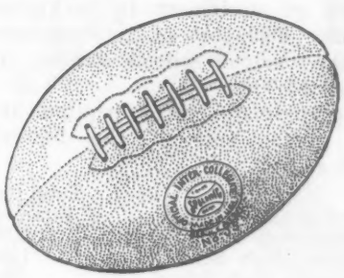

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ture Each Year for Physical Training?

This question was answered by 13 of the 21 high school superintendents. A total of $11,560 was spent during the year 1926 and 1927. The amounts ranged from $10 to $6,550 and shows an average of $889 for the 13 schools.

Bloomington High School last year spent $6,550 for physical training activities including salaries. Saybrook High School expended $250 which was used to purchase equipment used by the students in class work. The superintendent of Normal High School stated that $2,250 was spent last year and this sum included the instructor's salary.

The following high schools spent money last year for physical training purposes:

Name of High School	Amount Spent for Physical Training
Arrowsmith High School	$ 800
Bloomington High School	6,550
Cropsey High School	200
Downs High School	50
Funks-Grove High School	50
Gridley High School	500
Heyworth High School	10
Leroy High School	300
Lexington High School	100
McLean High School	250
Normal High School	2,250
Saybrook High School	250
Stanford High School	250
Total	$11,560

Do You Have a Gymnasium in Connection with the High School?

Data shows that of the twenty-one high schools, twelve have gymnasiums in connection with the school building, three have separate buildings built on the school premises and owned by the school, five rent community or town halls, and one is without any of the above three.

The following high schools have gymnasiums in connection with the school building:

Bloomington High School
Chenoa High School
Cropsey High School
Downs High School
Funks-Grove High School
Heyworth High School
McLean High School
Normal High School
Leroy High School
Lexington High School
Saybrook High School
Stanford High School

The following high schools own gymnasiums but are separate buildings, built on the school premises:

Carlock High School
Cooksville High School
Colfax High School

The following high schools rent community or town halls:

Arrowsmith High School
Danvers High School
Ellsworth High School
Gridley High School
Towanda High School

Hudson, Illinois, a rural town having a two year high school neither owns a gymnasium nor rents a community or town hall. Due to this fact, sports are played on a gravel playground. Hudson is, however, the only two year high school in the county.

What Is the Approximate Cost of Equipment in the Gymnasium?

Seven schools answered the above question reporting a total of $2,180 worth of equipment in the gymnasiums. The cost of this equipment in the various schools ranges from $30 to $1,000.

Approximate cost of equipment in the gymnasiums of the following high schools:

Name of High School	Total Cost of Equipment
Bloomington High School	$1,000
Cropsey High School	150
Heyworth High School	30
Lexington High School	500
McLean High School	200
Normal High School	150
Saybrook High School	150
Total	$2,180

Table 5

Table 5 reveals:

1. That 18 tennis courts are owned by high schools throughout the county.
2. That 16 ball fields are owned by high schools throughout the county.
3. That 11 track fields are owned by high schools throughout the county.
4. The size of the track.

The schools have rather complete equipment in the county. Eighteen have tennis courts, nearly one for each high school located somewhere on the school playground; 16 football or baseball fields; 11 track fields ranging from 300 ft. square to 220 yd. straightaway tracks. None of the 11 track fields are 220 yd. track which is a regular size track recommended for high school use. Several of the small rural high schools own tennis courts, ball fields, track fields, and 220 yd. oval tracks while several of the larger high schools are without any of the above. Three high schools are without any equipment.

What is the Approximate Expenditure Each Year For Athletics Alone?

Nineteen of the twenty-one high school superintendents answered the above question. During the past year a total of $10,645 was spent for physical training. $9,530 was spent for athletics which leaves a total of $915 more which was spent for physical training than was spent for athletics.

Hudson, a two year rural high school, spent $20 for athletics while Lexington high school spent $2,500. Most superintendents stated that approximately all of this money was the actual expenditures for equipment, transportation, officials, etc., but most of it was made back at the gate and door during scheduled athletic contests.

Expenditures for Athletics in Nineteen High Schools

Name of High School	Expenditure for Athletics
Bloomington High School	$1,350
Carlock High School	100
Chenoa High School	850
Colfax High School	150
Cropsey High School	125
Danvers High School	150
Downs High School	250
Ellsworth High School	100
Funks-Grove High School	50
Gridley High School	500
Heyworth High School	200
Hudson High School	20
Leroy High School	2,000
Lexington High School	2,500
McLean High School	500
Normal High School	1,000

Table V.

Equipment Owned by the High Schools

Name of High School	No. of Tennis Courts	No. of Ball Fields	No of Track Fields	Size of Track
Arrowsmith	2	1		
Bloomington	1	1	1	220 yd.
Carlock	1	1	1	220 yd.
Chenoa				
Colfax	2	1	1	1/6 mi.
Cooksville				
Cropsey	2	1		
Danvers	1			
Downs		1	1	220 yd.
Ellsworth		1		
Funks Grove		1		
Gridley	1	1	1	220 yd.
Heyworth	1	1	1	220 yd.
Hudson	1	1	1	220 yd.
Leroy		1	1	220 yd.
Lexington		1	1	300 sq. ft.
McLean	2	1	1	220 yd.
Normal		1		
Saybrook	2			
Stanford	2	1	1	220 yd.
Towanda				
Total	18	16	11	

Note: Blank spaces indicate that there is no equipment owned by the school.

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The **10H** is the lightest weight helmet possible to manufacture. Made of solid fibre throughout, covered with fine strap leather. One-piece forehead construction. **Attractive, light and highly protective.** Price $12.00

The **No. 22 Shoulder Pad** is light, comfortable, and gives perfect protection. Made of white felt, reinforced with fibre stripes at chest and back. Sole leather shoulder caps and collar bone protection. Gives perfect freedom of action. Price $9.00

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Developed for complete protection of the player. Made of heavy tan water repellent eight-ounce duck. It has the new cupped knee with rawhide patch over white felt. The fibre clipping pad is adjustable. The solid fibre thigh guard padded with white felt fits into a drill pocket and is also adjustable. White felt kidney pad reinforced with fibre strips and covered with eight-ounce duck, while below the waist the pad is made of heavy sponge rubber which gives complete protection.

The pant has ventilated bellows crotch, rawhide crotch stay, fibre spine pad and tunnel belt loops with web belt. Price $20.00

The "Pop" Warner Prep Pant No. FWP, built similar to the varsity model for the preparatory or high school player, of slightly lighter material. Price $12.50

The "Pop" Warner Pant

The D&M Gold Seal Line

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THE "POP" WARNER PREP HELMET

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Saybrook High School	300
Stanford High School	300
Towanda High School	200
Total	$10,645

Of What Benefit Do You Think Physical Training Is to High School Boys and Girls?

This question was answered by 18 high school superintendents and is probably more vital than any other question asked in this questionnaire. Their conception was that for high school boys and girls its aim should be to develop the child's body according to well-defined physiological, and pedagogical laws. Following are their objectives for physical training:

Arrowsmith High School: "At the present time (keeping in mind, the purpose of physical training), there is much to be hoped for. The apparent purpose is *win* regardless of other objectives. Health is a primary objective in secondary education and should receive intelligent consideration. Physical training for all should be the program."

Bloomington High School: "The primary objective in education is the training of boys and girls into men and women of character, honesty, and unselfish conduct. Physical training and athletics help."

Carlock High School: "Physical training is of great value to boys and girls in high school. It offers an opportunity to correct physical defects. It develops an interest that is worthwhile and tends to draw them away from activities such as loafing, street walking, and etc., which are detrimental to the development of their bodies."

Chenoa High School: "We have compulsory physical training in the grades but not in the high school. Athletics is of value to those in high school who have little work to be done at home."

Colfax High School: "Teaches cooperation, loyalty, spirit of fair play, and other beneficial attributes necessary to succeed in after life. Encourages some boys to continue their education and to study more efficiently 'in spite of themselves,'—owing to rules regarding eligibility of players."

Cooksville High School: "In my estimation it is about 30 per cent efficient as it now is handled."

Cropsey High School: "Teaches sportsmanship; keeps them in better physical condition and consequently in better health; makes them more self reliant, helps them to correlate muscular activities with thought."

Danvers High School: "Physical training is very practical from the health standpoint."

Ellsworth High School: "It would be hard to introduce an organized system of physical training for boys. Would be a fine thing for girls if we had a gymnasium."

Funks-Grove High School: "Teaches correct posture, develops unused muscles. Teaches correct habits for health. Exercise!"

Hudson High School: "Puts them in such condition mentally and physically that they do better work in the class room. Is as important as any other subject taught in the class room."

Leroy High School: "Physical training is physically necessary for body development, morally helpful. Gives 'pep' to the school. Helps to increase enrollment and interest, secures patrons' interest."

Lexington High School: "Cleanliness—for the boys are required to bathe. Teaches better breathing habits. Gives boys and girls a better ability of getting around on their feet. Develops muscles. Makes for better health."

McLean High School: "Healthful employment of leisure time. Spirit of competition."

Normal High School: "Corrective and development physical training, such as outlined by the University of Illinois for high school students, is of importance equal to any other course, or the work in any other department."

Saybrook High School: "Physical training is of inestimable benefit to boys and girls. We do not have equipment to do more than we are doing, and it is impossible to obtain more at present."

Towanda High School: "Develops muscles, teaches alertness, cooperation, and team work."

Summary

1. The compilation of facts for this subject has involved correspondence with twenty-three superintendents of high schools in McLean county. Twenty-one sent information regarding conditions relating to the status of physical education in their schools.

2. The total enrollment of the 21 high schools number 2,524.

3. The enrollment of boys in 21 high schools numbers 1,154. Five hundred eighty-seven boys are taking some form of physical training. Twelve of the 21 high schools offer elective courses for boys. Five of the twenty-one high schools require boys to take physical training. Fifty per cent of all boys enrolled in high school are taking some form of physical training.

4. The enrollment of girls in 21 high schools numbers 1,370. Five hundred eighty-four girls are taking some form of physical training. Five of the 21 high schools offer elective courses for boys. Nine of the 21 high schools require girls to take physical training. Forty-two per cent of all girls enrolled in high school are taking some form of physical training.

5. Of the 21 high schools that have representative teams, 7 high schools have football teams, 20 have basketball teams, 10 have baseball teams, 17 have track teams, and 1 has a golf team.

6. Of the 21 high schools that have intra-mural competition, 1 high school has competition in football, 18 have competition in basketball, 9 have competition in baseball, 7 have competition in track, 3 have competition in tennis, 7 have competition in playground baseball, and 4 have competition in indoor baseball.

7. Seventy-four per cent of the high schools teach physical training the entire school year. Twenty-four per cent teach physical training one semester or eighteen weeks, 2 per cent do not offer physical training in their curriculum.

8. There are 2 high schools in the county that employ special teachers of physical training. The men instructors teach the boys and lady instructors teach the girls. Physical training in 4 rural high schools is taught by the superintendents. Fourteen high schools employ a coach to teach athletics and physical training and some other subjects. Three high schools employ a full time high school instructor who teaches other subjects, giving part time to physical training.

9. Thirteen high schools last year spent $11,560. Heyworth High School spent $10 while Bloomington High School spent $6,550. The median of the 13 high schools would be approximately $889. Several of the high schools paid salaries, clothes for students and etc. out of this small sum of money.

10. Statistics show that of the 21 high schools in the county, 12 have gymnasiums in connection with their school building, 3 possess separate buildings built on the school premises and owned by the school, 5 rent community or town halls, and 1 is without any of the above 3.

11. Seven of the 21 high schools reported as having equipment in their gymnasiums valued at $2,180. Heyworth High School has equipment valued at $30 while Bloomington High School has equipment in their gymnasium valued at $1,000.

12. Statistics show that there are 18 tennis courts, nearly one for each high school located somewhere on the school playground, 16 football or baseball fields in the 21 high schools, 11 track fields owned by high schools ranging from 300 feet square to 220 yards. We find that 9 of the 11 track fields are 220 yards which is a regulation track.

13. The amount of money spent for athletics last year in 19 high schools totaled $10,645 or $915 less was spent for athletics than was spent for physical training. Most of the superintendents stated that approximately all of this money was the actual expenditures for equipment, transportation, officials and etc., but most of it was made back at the gate and door during scheduled athletic contests.

14. We find that there is a great diversity of opinion as to the benefit of physical training for high school

(*Continued on page 42*)

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Athletics in Secondary Schools

By Leonard Brodnax Plummer

Assistant Athletic Director and Director of Junior Athletics at the New Mexico Military Institute

(Continued from the March issue)

IN the March issue of the ATHLETIC JOURNAL Captain Plummer suggested the use of the tournament as one of the very best methods of stimulating interest in athletics. Practically every form of athletics, he said, would lend itself to the tournament plan. Tables VII and VIII, which were mentioned in that issue, are given in this number.—Editor's Note.

TABLE VII

MISCELLANEOUS MASS EVENTS

Events Especially Adapted for Use in the Junior High School (or Grades 7 and 8).	
All Fours Race*	15
Alternate Hop Race	10
Baseball Far Throw*	56
Baseball Pitch*	71
Baseball Target Throw*	70
Basketball Far Throw*	63
Basketball Goal Throw*	67
Bear Gallop Race*	16
Double Hop*	33
Double Jump*	30
Fence Vault*	47
Frog Jump Race*	16
Grip*	98
Hang Travel (hand over hand on both rails)*	54
Hang Travel (hand over hand on rungs)*	54
Hang Travel (walking sideward on rail)*	54
Heading for Distance (Soccer)*	66
Heel Run Race*	10
Hobble Race*	11
Hurlball Far Throw*	63
Hurlball Target Throw*	72
Knee Raise*	94
Lap Race*	8
Leg Lifts*	90
One Leg Squat*	97
Playground Ball Pitch*	71
Pony Race*	19
Potato Race (5 potatoes)*	28
Pull-ups*	86
Punt for Distance (Soccer)*	64
Reverse Crab Walk*	18
Ring Travel*	56
Rope Climb (free style)*	52
Run, Toss, and Catch*	24
Running Hop, Skip and Jump*	35
Running Hop, Step and Jump*	36
Running the Bases*	25
Sit-ups*	91
Soccer Dribble (Indoors)*	26
Soccer Dribble (Outdoors)*	27
Soccer Throw-in for Distance*	62
Squat and Dip*	88
Stadium Potato Race (3 potatoes)*	30
Stand, Squat and Dip*	89
Standing Broad Dive*	40
Standing Hop, Skip and Jump*	35
Standing Hop, Step and Jump*	36
Standing Sideward Broad Jump*	37
Straddle Vault for Distance*	48
Three Legged Race*	23
Three Pegs*	33
Toe Grasp Race*	13
Trunk Lifts*	91
Waist Carry Race	21
Wheelbarrow Race*	23
Volley Ball Serve for Distance*	66
Zig-Zag	36
Events Especially Adapted for Use in the Senior High School:	
All Fours Race*	15
Army Carry Race	19
Back Carry Race*	22
Bar Climb*	53
Bar Push for Distance	102
Bar Snap for Distance	102
Bar Vault (free style)*	47
Basketball Target Throw*	70

The following events are very well adapted to this type of meet:

Short Runs:	Scoring Ranks:
1. 50 yard dash	Full sec.
2. 100 yard dash	Full sec.
3. 220 yard dash	Full sec.
4. 1 lap on track	Full sec.
5. Obstacle race	Full sec.
Long Runs:	
1. 440 yard run	Ea. 2 sec.
2. 880 yard run	Ea. 5 sec.
Broad Jumps:	
1. Standing broad jump	Ea. 2 in.
2. Running broad jump	Ea. 6 in.
3. 3 standing broad jumps	Ea. ft.
4. Standing hop, step and jump	Ea. ft.
5. Running hop, step and jump	Ea. yd.
6. Standing broad jump	Ea. 2 in.
7. Three pegs	Ea. 6 in.
8. Backward jump	Ea. 2 in.
High jumps:	
1. Standing high jump	Ea. 2 in.
2. Running high jump	Ea. 3 in.
Vaults:	
1. Bar vault	Ea. 3 in.
2. Fence vault	Ea. 3 in.
3. Wall climb	Ea. full sec.
Far Throws:	
1. Baseball throw	Ea. 10 yd.
2. Discus throw	Ea. 10 ft.
3. Shot put	Ea. yd.
4. Medicine ball throw	Ea. yd.
5. Hurl ball throw	Ea. 10 ft.
6. Basketball throw	Ea. 10 ft.
Accuracy:	
1. Basketball throw (10)	Ea. point
2. Horseshoe pitching (5)	Ea. point
3. Baseball target throw	Ea. point
High Dives:	
1. Standing high dive	Ea. 3 in.
2. Running broad dive	Ea. 4 in.
Broad Dives:	
1. Standing broad dive	Ea. 2 in.
2. Running broad dive	Ea. 6 in.
Strength:	
1. Floor-dips	Ea. 2 floor-dips

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Basketball Dribble* 24
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Basketball Goal Shoot* 67
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Corner Kick for Accuracy (Soccer)* 80
Donkey Race* 21
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Dribble Kick for Accuracy (Soccer)* 79
Drop Kick for Distance 65
Fireman's Carry Race 22
Floor Vault* 49
Forward Pass for Distance 64
Hang Travel (double jumping on rungs) 54
Hanging Hinge* 93
Heading for Distance (Soccer)* 66
Jump and Reach* 99
Kangaroo Jump 32
Knee Taps* 96
Measuring Feet Race* 9
Medicine Ball Far Throw (forward)* 58
Medicine Ball Far Throw (free style)* 57
Peg Stretch* 107
Pirouette* 104
Place Kick for Accuracy (Soccer)* 78
Place Kick for Distance (Rugby)* 64
Potato Race (6 potatoes)* 28
Pull-ups* 86
Punt for Distance (Rugby)* 65
Rope Climb (free style)* 52
Running Broad Dive 41
Running Broad Hop* 33
Running Double Broad Jump* 31
Running Double High Jump 39
Running High Hurdle 39
Running High Kick (free style)* 43
Running High Touch* 99
Running Hitch Kick* 43
Running Springboard High Jump 40
Sit-ups* 91
Sky Jump* 101
Spider Jump* 31
Stadium Potato Race (5 potatoes)* 30
Standing High Dive 41
Standing High Kick* 42
Standing Stretch Kick (forward)* 41
Support Hinge 94
Triple Jump* 31
Volley Ball Serve for Accuracy* 84

TABLE VIII

GAMES FOR HIGH SCHOOLS

(For pupils 15 to 19 years of age)

Miscellaneous Active Games

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Japanese Tag Race 116
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Jump the Shot 122
Last Couple Out 125
Leader and Footer 127
Leapfrog Race 129
Master of the Ring 131
Maze Tag 131
Old Man's Cap 140

2. Pull-ups .....Ea. pull-up
3. Sit-ups .....Ea. 2 sit-ups

Special:

1. Bar snap for distance .....Ea. 3 in.
2. bar push for distance .....Ea. 2 in.

In conducting a meet of this type it is not practical to rank the contestants according to their exact record. The scoring ranks shown in connection with the list of events which may be used in a meet of this type will be found quite satisfactory. To rank contestants after the completion of an event the instructor should place all of them in a line, find the best records and call out those entitled to first rank. These are placed in one line. Then by referring to the scoring table he should call for those entitled to second rank and so on, placing each group in a separate line until all have been ranked. For example, if the best record for the 100 yd. dash is 11.2, all those who have better than twelve seconds would form the first rank, and all those under thirteen seconds would form the second rank. Each member in a rank scores as many points as the number of his rank. The team having the lowest score wins. As the scoring requires so much time this method should be used only occasionally, as there are other more efficient methods."[91]

Zone Method.—The zone method is a modification of the point method. The chief difference is in the method of conducting and recording. In the point method each performance is measured and points awarded accordingly; in the zone method the possibilities of performance are charted off in zones and a contestant's performances are automatically evaluated. For informal uses and for handling large numbers the zone method is very satisfactory. The following events are very well adapted to a meet of this kind:

Runs:

1. 50 yards
2. 100 yards
3. 220 yards
4. 1 lap around track

Jumps:

1. Standing broad jump
2. Running broad jump
3. Triple jump
4. Running hop, step and jump
5. Standing hop, step and jump
6. Standing high jump
7. Running high jump

Throws:

1. Shot put
2. Discus throw
3. Baseball throw

[91]Ibid, pp167-173.

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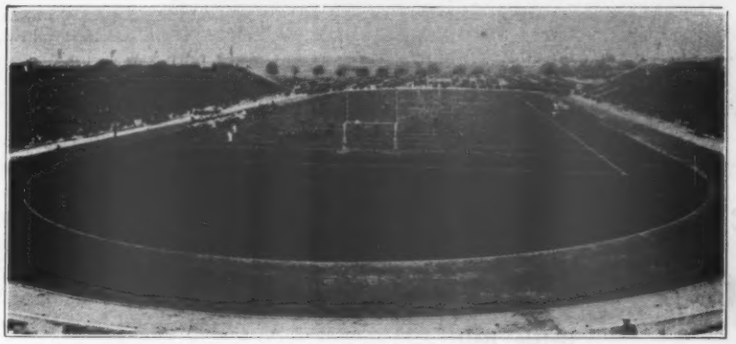

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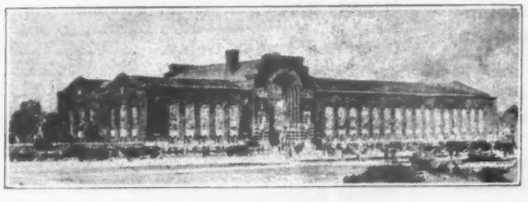

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TABLE IX

TABLE OF ZONES

(Zone Method Mass Athletic Competition)

Runs

		Senior High School	Junior High School
		40 yds.	40 yds.
		42½ yds.	42½ yds.
		45 yds.	45 yds.
		47½ yds.	47½ yds.
		50 yds.	50 yds.
	(Base Times)—	6 3/5 sec.	7 sec.
100 Yard Dash		80 yds.	80 yds.
		85 yds.	85 yds.
		90 yds.	90 yds.
		95 yds.	95 yds.
		100 yds.	100 yds.
	(Base Times)—	12 sec.	13 sec.
		180 yds.	
		190 yds.	
		200 yds.	
		210 yds.	
		220 yds.	
	(Base Times)—	27 sec.	

4. Medicine ball throw

Accuracy:
1. Basketball free throws
2. Horseshoe pitching

Diving:
1. Standing broad dive
2. Running broad dive
3. Standing high dive
4. Running high dive

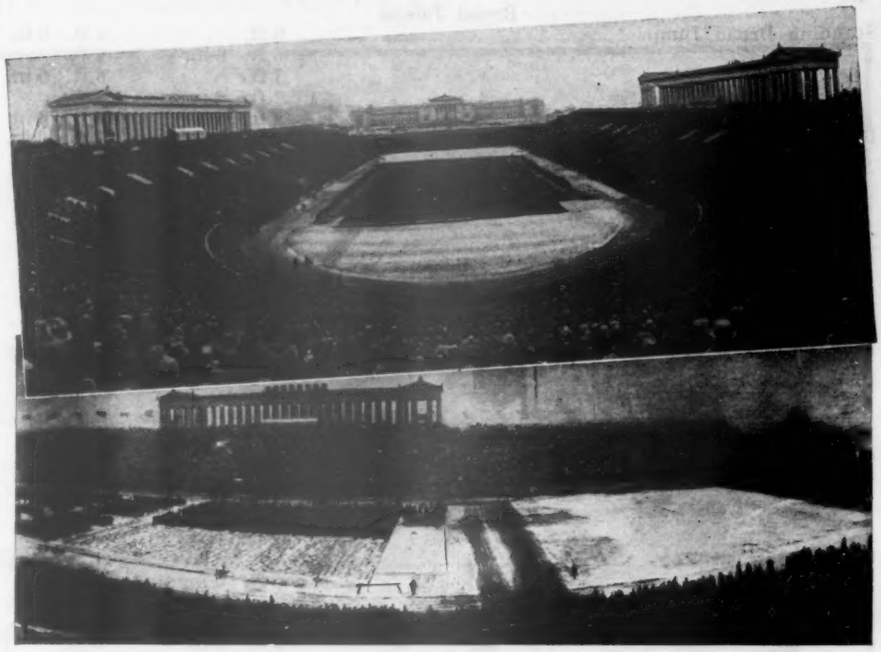
Miscellaneous:
1. Bar vault
2. Fence vault
3. Rope climb

Strength:
1. Pull-ups
2. Push-ups
3. Sit-ups

In order to get the best results the zones should be arranged to meet the particular abilities of each group. In the runs a finish and starting lines are established at the required distance apart. Then four other lines are established at intervals of one-twentieth of the entire distance—establishing these from the finish line toward the starting line. Counting from the starting line we have the one point, two point, three point, and four point zones, with the five point zone beyond the finish line. The contestants start the race in the usual way. The timer starts his watch at the word "Go" and calls "Time" at the expiration of the base time for that race. The contestants are given points according to the zone they are in when the word "Time" is given. The base time and zones for these runs are given in Table IX. The zones for the succeeding events are given in this table.

In the broad jumps the zones are established at the required distance, in front of the take-off line, and parallel to that line. Five zones are used for all events under the zone method of competition. In the broad jump the contestants are given points according to the zone in which their best marks are found. In the high jumps the bar is first placed at the height marking the one point zone. All contestants who clear it remain in the competition. Those who fail are eliminated. The bar is then raised in succession to the zone heights until all have been eliminated or the fifth zone reached. Points are awarded according to the last height cleared by the contestant.

The broad diving events are conducted in the same manner as the broad jumping events; the high dives as the high jumping events. The kicking events are carried on in the same manner as the high jumping events with the exception that a drum is used for the contestants to kick instead of a bar. The vaulting events are carried on in the same manner as



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Broad Jumps		
Standing Broad Jump	6 ft.	5 ft. 6 in.
	6 ft. 6 in.	6 ft.
	7 ft.	6 ft. 6 in.
	7 ft. 6 in.	7 ft.
	8 ft.	7 ft. 6 in.
Running Broad Jump	10 ft.	7 ft. 6 in.
	10 ft.	9 ft.
	12 ft.	10 ft. 6 in.
	14 ft.	12 ft.
	16 ft.	13 ft. 6 in.
Triple Jump	15 ft.	12 ft.
	17 ft.	14 ft.
	19 ft.	16 ft.
	21 ft.	18 ft.
	23 ft.	20 ft.
Standing Hop, Step and Jump	15 ft.	12 ft.
	17 ft.	14 ft.
	19 ft.	16 ft.
	21 ft.	18 ft.
	23 ft.	20 ft.
Seven Jumps	36 ft.	33 ft.
	40 ft.	36 ft.
	44 ft.	39 ft.
	48 ft.	42 ft.
	52 ft.	45 ft.
Standing Broad Hop	5 ft. 2 in.	4 ft. 8 in.
	5 ft. 6 in.	5 ft.
	5 ft. 10 in.	5 ft. 4 in.
	6 ft. 2 in.	5 ft. 8 in.
	6 ft. 6 in.	6 ft.

	Senior High School	Junior High School
High Jumps		
Standing High Jump	2 ft. 4 in.	2 ft.
	2 ft. 8 in.	**2 ft. 4 in.**
	3 ft.	2 ft. 8 in.
	3 ft. 4 in.	3 ft.
	3 ft. 8 in.	3 ft. 4 in.
Running High Jump	2 ft. 6 in.	2 ft. 5 in.
	3 ft.	2 ft. 10 in.
	3 ft. 6 in.	3 ft. 3 in.
	4 ft.	3 ft. 8 in.
	4 ft. 6 in.	4 ft. 1 in.
Broad Dives		
Standing Broad Dive	4 ft. 8 in.	4 ft. 2 in.
	5 ft.	**4 ft. 6 in.**
	5 ft. 4 in.	4 ft. 10 in.
	5 ft. 8 in.	5 ft. 2 in.
	6 ft.	5 ft. 6 in.
Running Broad Dive	6 ft. 6 in.	6 ft.
	7 ft. 4 in.	6 ft. 8 in.
	8 ft. 2 in.	7 ft. 4 in.
	9 ft.	8 ft.
	9 ft. 10 in.	8 ft. 8 in.
High Dives		
Standing High Dive	2 ft. 6 in.	2 ft.
	2 ft. 9 in.	2 ft. 3 in.
	3 ft.	2 ft. 6 in.
	3 ft. 3 in.	2 ft. 9 in.
	3 ft. 6 in.	3 ft.
Running High Dive	3 ft. 2 in.	2 ft. 8 in.
	3 ft. 6 in.	3 ft.
	3 ft. 10 in.	3 ft. 4 in.
	4 ft. 2 in.	3 ft. 8 in.
	4 ft. 6 in.	4 ft.
Kicking Events		
Running High Kick: (Free style)	5 ft. 6 in.	5 ft.
	6 ft.	5 ft. 6 in.
	6 ft. 6 in.	6 ft.
	7 ft.	6 ft. 6 in.
	7 ft. 6 in.	7 ft.
Standing Stretch Kick	4 ft. 9 in.	4 ft.
	5 ft. 2 in.	4 ft. 5 in.
	5 ft. 7 in.	4 ft. 10 in.
	6 ft.	5 ft. 3 in.
	6 ft. 5 in.	5 ft. 8 in.

	Senior High School	Junior High School
Vaults		
Bar Vault	3 ft. 10 in.	3 ft. 4 in.
	4 ft. 2 in.	3 ft. 8 in.
	4 ft. 6 in.	4 ft.
	4 ft. 10 in.	4 ft. 4 in.
	5 ft. 2 in.	4 ft. 8 in.
Fence Vault	3 ft. 10 in.	3 ft. 4 in.
	4 ft. 3 in.	3 ft. 9 in

the high jumps; the throwing events as the broad jumps. In the strength and accuracy events the contestants are required to execute the required events. They are awarded points in accordance with the way their records correspond with the records in the table of points for the five zones. In a general way the zone method may be used to determine individual physical efficiency. In order to do this a contestant would have to attempt all events and his total score would determine his physical efficiency. If this is done it would be well to use a pentathlon or hexathlon with events chosen from the list. In this way all-around championships may be determined."[55]

Point Method.—The point method is very popular in outdoor meets. It may be used successfully outdoors. This method is based on the principles of a definite value for all degrees of performing ability. Three principles of scoring are used: (1) All portions of performance have the same value; (2) As the performance improves, the value of a given portion increases; (3) Increased value is given within the range of average performance. Most scoring systems are so arranged that definite measurements of time or space gives definite proportions of the total score. For example, using 1000 per cent as a basis, in the 100 yard dash the world's record of 9 3/5 seconds would give a perfect score of 1000 per cent, a run of 13 3/5 seconds would score zero. On this basis each one-tenth of a second would have a 25-point value. In the running broad jump 25 feet would score 1000 per cent and 8 feet 4 inches zero. Each inch would have a 5-point value.

In a second type of scoring little credit is given in the lower section of the scale and credit is gradually increased until the top is reached. This is much fairer as it is easy to increase the lower marks but very difficult to increase the others. The following table outlines the plan:

The system of scoring used in the Detroit public schools illustrates the third method of scoring. The principle followed is that of giving increased credit within the average range of performance and comparatively little credit for increase in the upper and lower levels of performance. For example, in the running broad jump for grade school boys, 10 points are given for an increase from 8 feet to 8 feet 4 inches, 100 points for an increase from 11 feet to 11 feet 6 inches, and 10 points for an increase from 14 feet to 14 feet 6 inches. This emphasizes all-around

[55]Ibid, pp174-184.

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	4 ft. 8 in.	4 ft. 2 in.
	5 ft. 6 in.	4 ft. 7 in.
	5 ft. 1 in.	5 ft.
Throws		
Shot Put (12 lb.)	16 ft.	(8 lb) 16 ft.
	20 ft.	20 ft.
	24 ft.	24 ft.
	28 ft.	28 ft.
	32 ft.	32 ft.
Discus Throws	40 ft.	24 ft.
	48 ft.	30 ft.
	56 ft.	36 ft.
	64 ft.	42 ft.
	72 ft.	48 ft.
Javelin Throw	48 ft.	30 ft.
	60 ft.	40 ft.
	72 ft.	50 ft.
	84 ft.	60 ft.
	96 ft.	70 ft.
Baseball Throw	125 ft.	100 ft.
	150 ft.	125 ft.
	175 ft.	150 ft.
	200 ft.	175 ft.
	225 ft.	200 ft.
Medicine Ball Throw (6-lb. ball, free style)	24 ft.	16 ft.
	28 ft.	20 ft.
	32 ft.	24 ft.
	36 ft.	28 ft.
	40 ft.	32 ft.
Medicine Ball Throw (6-lb. ball, forward throw)	24 ft.	16 ft.
	28 ft.	20 ft.
	32 ft.	24 ft.
	36 ft.	28 ft.
	40 ft.	32 ft.
Strength Events		
Pulls-ups	3	2
	6	4
	9	6
	12	8
	15	10
Push-ups	2	1
	4	2
	6	3
	8	4
	10	5
Sits-ups	8	6
	12	9
	16	12
	20	15
	24	18
Floor-dips	8	6
	12	9
	16	12
	20	15
	24	18
Accuracy Events		
Free Throws (10)	3 points	2 points
	4 points	3 points
	5 points	4 points
	6 points	5 points
	7 points	6 points
One Hand Shot (10)	3 points	2 points
	4 points	3 points
	5 points	4 points
	6 points	5 points
	7 points	6 points
Basket Shooting for Speed (30 sec.)	6 points	5 points
	8 points	7 points
	10 points	9 points
	12 points	11 points

TABLE X

Points (total)	2	6	12	20	30	42	56	72	90	110
Points of increase	2	4	6	8	10	12	14	16	18	20
R. B. jump, ft.	11	12	13	14	15	16	17	18	19	20
100 yard dash, sec.	14	13.6	13.2	12.8	12.4	12	11.6	11.2	10.8	10.4

skill rather than specialized skill.

There are several methods of conducting a meet of this type: (1) When the meet is by teams each contestant of each team tries each event and these scores are totaled. The total score of the highest ten is taken as the team's score. (2) A second method is to have each contestant compete in each event as before. A team's score in each event is the total of its individual scores divided by the number of its contestants. (3) In the individual or all-round championship method each contestant takes part in all events. The places are awarded on the basis of each contestant's total points.[58]

Group Method.—On the group method the records of each member of a team, or a large proportion of them, are taken and converted into a total or average. This figure will represent the team record and the places are awarded according to the standing of the team rather than the standing of the individuals. The chief advantage of this method is that the poor and mediocre contestant will feel encouraged to enter. Meets of this type are very successful in telegraph, telephone or mail competition with groups located elsewhere. The meet is conducted on the home field and the results are sent to the opponents. The Y. M. C. A. Senior Hexathlon Contests, held annually in February, but open only to certain Y. M. C. A. teams, is a good example of such a type of contest. Meets may very easily be arranged with various high schools or other groups."

V. Administrative Matters

Adaptation of Program.—There is a distinct tendency at the present time to organize individual and mass athletics as a part of the school physical education program. Many grade schools, high schools, and colleges have well organized systems in operation. Frederick J. Reilley, Principal of Public School No. 33 in New York City, has worked out a very effective system for that school. He has junior and senior divisions which are in turn classified according to age, grade, height, and weight. Mr. Reilley has worked out a table for Rational Athletics for Boys which he uses to determine all-round athletic efficiency. He uses the regular physical training period for practice, trials, and finals. There are monthly interclass meets, annual interschool meets, and biennial pentathlons. Buttons and medals are awarded in these various meets.

Detroit has a system based on four types of activity: stunts, individual athletic events, combative events, and games. Each school under this system elects an athletic captain, each room an athletic lieutenant, and each room has six or eight squads in charge of squad leaders. Five new events are added each month. These events are first taught to the captains. The captains teach the lieutenants and from them they pass through the squad leaders to the squads. Each boy's performances in the events are measured and recorded by the captain and reported to the director's office. The director tabulates

(*Continued on page 47*)

[97]Ibid, pp196-200.
[98]Ibid, pp189-192.

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A Study of Fatigue, In Its Effect Upon Muscular Activity in Athletics

By Judson A. Hyames
Western State Teachers College

THE development of research dealing with the effects of physical education, recreation and athletics, especially in this day and age when so much consideration is being given to these departments from the standpoint of health (both mental and physical), is, in the writer's judgment, of vital importance.

There is a problem in fatigue that has been given very little consideration, that should be of interest not only to athletic coaches and play leaders but to all who are interested in muscular activity.

When dealing with fatigue one of our first considerations is the nervous system. The neuron, of course, is the unit of the nervous system, but it is in the nerve cell we find nerve energy generated.

Dr. J. H. Herzog of the Battle Creek Sanitarium in one of his latest publications, states: "The source of nerve energy in the cell has been shown to be certain minute granules known as energy granules which represent stored up energy that has been gathered from the food materials circulating in the blood stream."

These nerve cells have been likened to battery cells. The nerve cells generating nerve energy like the battery cell generates electricity and a cell through its activity consumes itself just as a battery uses up the elements of which it is composed.

When examined under a microscope, a healthy nerve cell reveals a number of minute glistening granules and Professor Hodge, an eminent physiologist, demonstrated in his detailed study of the nerve cells of swallows, that there is a great loss of cell substance after the bird has been for hours active on the wing. This shows that these granules represent stored energy.

When the cell has used up its store of energy so that the output is very small, or has ceased altogether, it is in a state of partial or complete exhaustion.

Now in the case of partial or complete exhaustion it requires considerable rest and sleep to again store up energy granules in the cells and have what is called a rested cell ready for work.

In order that the working cell may maintain its activity, it must be constantly bathed with blood rich in oxygen, so that the waste products of its activity may become oxidized and eliminated as they are formed, thus preventing the accumulations of fatigue poisons. But suppose the oxygen is not sufficient to prevent an accumulation of fatigue poisons, then what happens,

It is this phase of fatigue as it effects muscular efforts in athletics and the factors involved in recovery of same that the writer is interested. The writer has observed in athletic competition that after a hard race, part of a game, or some field event the contestant apparently was much fatigued but after a period of rest was able to return to a new test and perform as well as ever.

This, of course, would be impossible if the energy granules were used up in the nerve cells so some other course must be found for the fatigue. This is to be sought in the condition of the muscles.

Professor Ranke found that an extract prepared from exhausted frog muscles produced fatigue when introduced into the circulation of fresh muscles. This apparently shows that poisons result from the activities of the cells and if the blood and lymph cannot remove the poisons as fast as they are formed we get the sensation of fatigue.

Laboratory experiments have demonstrated that an exhausted muscle may be completely rested by simply washing it, showing that the exhausted muscle contains some element the removal of which restores the ability of the muscle to work. A good illustration of this is found in Dr. Kellogg's experiment on a frog.

He dissected a muscle of the leg and tied a weight to it then stimulated the muscle to work by an electric current. He kept stimulating this muscle until it would not respond to stimulus at all.

Then the doctor washed out this muscle and when stimulus was applied the muscle was strong and active as ever. This seems to prove that fatigue poisons do accumulate and inhibit muscular effort.

But unfortunately in the case of college athletes the muscles cannot be taken out and washed! The change that has taken place is shown by Archibald Vivian Hill, Professor of Physiology of University College, London, who said in the Herter Lectures at Johns Hopkins University, "When a muscle is fatigued definite changes are recognizable," as follows:

1. "Glycogen disappears.
2. Lactic acid appears in equivalent amount.
3. Performed CO_2 is driven off.
4. Heat is produced proportional to the lactic acid formed.
5. The hydrogen ion concentration rises."

The lactic acid seems to be the main element that causes the muscular fatigue and oxygen apparently is its enemy. Professor Hill states: "In a resting isolated muscle left in oxygen, lactic acid does not appear; any originally there tends to disappear. In an isolated muscle stimulated in oxygen lactic acid is set free but vanished against during a subsequent resting period."

During this "recovery process," so called CO_2 is produced equivalent in amount to the oxygen used, heat is liberated and glycogen is restored. Rapidity of recovery from sense fatigue is due to the plentiful supply of oxygen through the circulation. One litre of oxygen consumed after exercise is equivalent to seven grams of lactic acid removed and when a runner is running as fast as he can four grams of lactic acid are being liberated every second.

The problem is: when the exercise is over, to remove the lactic acid and take in sufficient oxygen to provide the necessary energy. Two methods have proven successful—rest and the cold shower.

Dr. Kellogg in his text on Rational Hydrotherapy says: "An examination of the expired air shows that an increased amount of oxygen is absorbed and an increased amount of CO_2 is exhaled under the influence of cold application." Crawford showed more than a century ago (1781) that cold increases the difference in color between arterial and venous blood, the result of oxidation.

Liebig observed more than half a century ago that cold air, cold water,

and exercise habitually employed, are the most powerful of all means of stimulating tissue activity.

Dr. Kellogg, again, states: "A short cold bath, as a douche or spray, lasting for a few seconds, augments muscular energy and tone to a very remarkable degree." He then backs up his statement of the cold bath as to the restorative effects by the following experiment.

"M. J. N., a man of 21 years, weight 136 pounds, rode, August 26, 1900, 35 miles on a bicycle within 2½ hours. At the end of which time he was very much fatigued, not being accustomed to long riding. The muscular capacity of the subject, as shown by the author's dynomometer was 6,870 pounds. At the conclusion of the ride the dynomometer showed reduction of nearly 1,000 foot pounds.

A cold (55°) percussion douche was administered for 30 seconds, having been preceded by a hot shower for 30 seconds. A second test with the dynomometer was then made, and the total strength was found to be increased to 6,555 pounds. A gain of 600 pounds. The sensation of freshness, and vigor, experienced by the subject as the result of cold shower was so marked that he expressed himself as being quite relieved from any sensation of exhaustion."

In 1893, Winternitz, of Vienna, called attention to the remarkable influence of cold applications in increasing the number of blood corpuscles both red and white, and also the amount of hemoglobin, however, the white corpuscles were increased in much greater proportion that the red corpuscles.

In one case reported by Winternitz the increase of blood corpuscles by a hot bath followed by a cold one was 1,860,000 per c. mm. "This remarkable phenomenon is due, according to Winternitz, not to the sudden creation of new blood corpuscles but to the contraction of the vessels of the viscera caused by the application of cold to the surface, whereby great numbers of corpuscles which have been collected in the vessels of the liver, kidneys, spleen and other internal viscera are driven into the circulation."

Another factor that should be touched upon in consideration of fatigue is that of heat. Heat acts as a depressent and closely resembles fatigue but may be quickly overcome by cold applications as shown by Dr. Kellogg in the following experiment.

"The strength of a vigorous healthy man was tested with the universal dynomometer and was found to be, in the aggregate, 6,000 pounds. A hot

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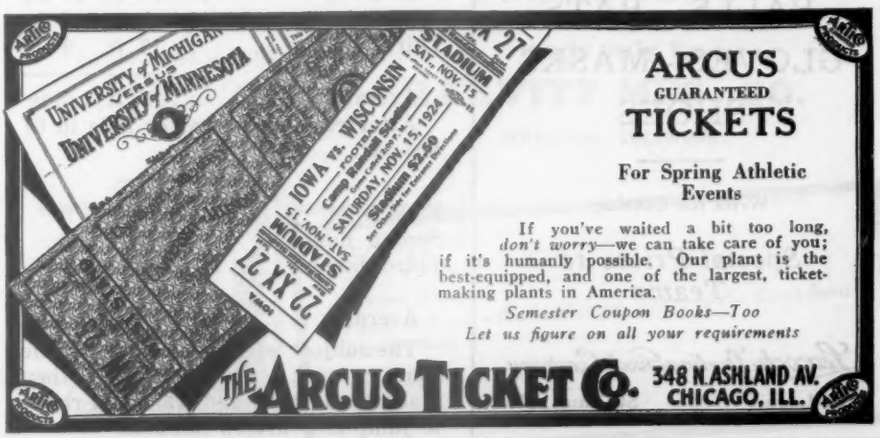

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bath was administered for half an hour at the end of which time the subject was very weak. The strength tests were repeated, and although the subject exerted himself to the utmost, the total was found to be only 5,000 pounds, or 16 per cent less than before the bath. A cold shower was then applied for 3 or 4 minutes, at the end of which time the strength was again tested and the total now found to be 6,100 pounds or more than at the beginning of the experiment."

This experiment shows very well the power of cold in neutralizing the effects of fatigue when due to causes other than actual exhaustion of the stores of energy in the nerve center. The above experiments illustrate the following generally accepted principles.

1. There is extreme muscular fatigue while the nerve cells still have plenty of energy granules, owing to the fact that there is an excess of lactic acid, in the muscles due to an insufficient supply of oxygen.

2. Rest will bring about a condition of oxygen sufficiency and an excess of oxygen that will eliminate the lactic acid, leaving the muscle in as active condition as ever.

3. When the energy granules are used up there is exhaustion and restoration is then obtained only by sufficient rest and sleep. Cold applications will not react or restore.

In the study of this problem the writer became more and more interested in trying out some experiments of his own, especially in the matter of the oxidative removal of lactic acid in the muscles where it is formed, by rest, and the cold water treatment.

The first experiment was worked out on Ferry Field by the writer. The subject was Mr. S., age 20 years, weight 155 pounds, the first test was three jumps, running broad (when in fresh condition).

Results

First jump .....15 ft. 10 in.
Second jump .....17 ft. 6 in.
Third jump .....17 ft. 9 in.

Average .....17 ft. 1/3 in.

After running a quarter mile in 67 seconds:

Results

First jump .....16 ft. 2 in.
Second jump .....14 ft. 9 in.
Third jump .....14 ft. 11 in.

Average .....15 ft. 3 1/3 in.

The subject left immediately for the showers, took a short hot bath, then a short cold bath and was back ready to jump in fourteen minutes.

Results

First jump .....16 ft. 6 in.
Second jump .....17 ft. 8 in.
Third jump .....17 ft. 10 in.

Average .....17 ft. 4 in.

His last jump following the bath was the best jump of all.

This gave convincing evidence as to the value of the cold shower in the matter of muscle recovery, but a question arose as to whether or not the same results might not have been obtained if the subject had only rested the fourteen minutes and eliminated the shower.

Vacation made it impossible to get the same subject to complete the test, so the writer was fortunate in finding a willing subject to work out the experiment, complete, on Western State Normal Field at Kalamazoo, April 13, 1927. The subject was Mr. M., age 22 years, weight 140 pounds.

In the forenoon the subject, while fresh, made four running broad jumps.

Results

First jump .....15 ft. 5 in.
Second jump .....16 ft. 3 in.
Third jump .....16 ft. 3½ in.
Fourth jump .....15 ft. 8 in.

Average .....15 ft. 10⅞ in.

Subject ran a half mile for fatigue, in 2:25 minutes then made four jumps.

Results

First jump .....15 ft. 4 in.
Second jump .....14 ft. 3½ in.
Third jump .....14 ft. 1 in.
Fourth jump .....13 ft. 11 in.

Average .....14 ft. 1⅞ in.

The subject went immediately to the gymnasium and took first a short hot bath and then a short cold bath and was back ready to jump in eight minutes.

Results

First jump .....15 ft. 1 in.
Second jump .....15 ft. 5 in.
Third jump .....15 ft. 11 in.
Fourth jump .....15 ft. 9½ in.

Average .....15 ft. 6⅝ in.

After eating lunch and resting until 2:30 p. m. the subject returned to jump again and test out the rest period. He made four jumps when fresh.

Results

First jump .....16 ft. 2½ in.
Second jump .....15 ft. 2½ in.
Third jump .....15 ft. 7½ in.
Fourth jump .....16 ft. 6 in.

Average .....15 ft. 10⅞ in.

The subject then ran the half mile, same as in the morning but two seconds slower—2:27 minutes. He then made four jumps.

Results

First jump	14 ft. 5½ in.
Second jump	15 ft. 3½ in.
Third jump	14 ft. 8½ in.
Fourth jump	15 ft. 3 in.
Average	14 ft. 4⅛ in.

The subject then rested eight minutes, same time as it had taken for bath in the a. m. He then jumped four times.

Results

First jump	15 ft. 7 in.
Second jump	15 ft. 6½ in.
Third jump	14 ft. 10½ in.
Fourth jump	14 ft. 8½ in.
Average	15 ft. 2⅛ in.

The subject then rested twenty-two minutes which made just thirty minutes besides the jumping time since the jumps made when fatigued.

According to test previously made the subject's muscles should be fairly free from the lactic acid on account of the supply of oxygen going into blood when intake of oxygen was greater than the output of lactic acid.

Results of jumps after thirty minutes of rest:

First jump	15 ft. 5 in.
Second jump	15 ft. 3 in.
Third jump	15 ft. 4 in.
Fourth jump	16 ft. 9 in.
Average	15 ft. 8¼ in.

The last jump made was the best jump of the day, showing that *rest*, as well as *cold water*, is a vital factor in eliminating lactic acid from the muscles.

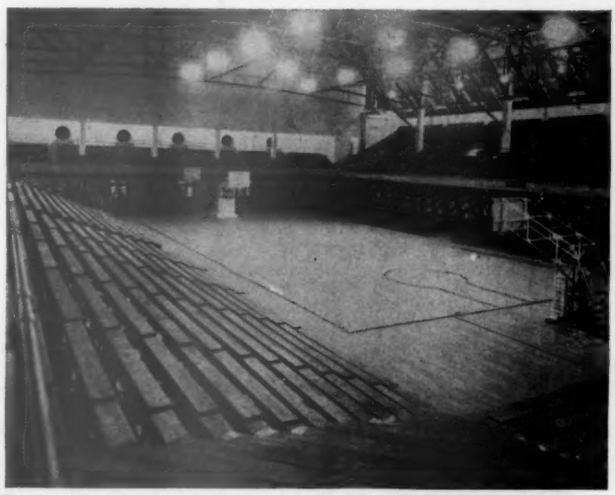
Three other tests were made. One in the 100 yard dash and two on the chinning bar, all showing that rest and cold applications are valuable factors in eliminating fatigue poisons in the muscles.

Summary of findings:

1. There is a decided difference when a cold shower is taken after muscular fatigue and when the subject is given the same time for rest without shower.

2. After the cold shower the jumps are even and if anything show an increase in distance. This seems to show the muscle free from fatigue poison. After rest only, the first jump seems to indicate the muscle free from fatigue poisons but the loss of distance on each succeeding jump, shows that the fatigue poisons are present and are increasing.

3. A rest period of from thirty to forty minutes after muscular fatigue seems sufficient to clear out fatigue



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poisons and leave the muscles as actice as ever.

Average Normal 15 ft. 10⅞ in. After thirty minutes rest. Last jump made was best of day.

General Conclusions:

Very little research has been done along this line but the writer believes there is a splendid chance for some careful investigation.

Averages for First Experiment

Normal condition — 3 running broad jumps .....17 ft. 1/3 in.
Fatigue condition — 3 running broad jumps .....15 ft. 3 1/3 in.
One-fourth mile in 67 seconds.
After shower — Time elapsed, 14 min.....17 ft. 4 in.

Second Experiment—New Subject

A. M.

Normal condition — 4 jumps .....15 ft. 10⅞ in.
Fatigued condition ...14 ft. 1⅞ in.
One-half mile in 2 min. 25 sec.—4 jumps.
After cold bath. Time elapsed 8 min.—4 jumps .....15 ft. 6⅝ in.

P. M.

Normal condition — 4 jumps .....15 ft. 10⅞ in.
Fatigued condition—4 jumps .....14 ft. 4⅛ in.
One-half mile in 2 min. 27 sec.
Eight minut rest.....15 ft. 2⅛ in.
Thirty minute rest...15 ft. 8¼ in.

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The Status of Physical Education in McLean County

(*Continued from page 26*)

boys and girls. Eighteen high school superintendents claimed that the first and foremost requirement of physical training for the high schools is that it has for its aim and object the harmonious development of the child's body according to well-defined physiological, psychological, and pedagogical laws.

Conclusion

"Physical education should aim to provide an opportunity for the individual to act in situations that are physically wholesome, mentally stimulating and satisfying, and socially sound."[1] The superintendents of the high schools in McLean county have, in this study, shown that they are unaware of the objectives of physical education.

The objectives of physical education should be higher than those given by the superintendents. We need to aim higher than victorious teams. G. Stanley Hall once stated, that physical education is for the sake of mental and moral culture and not an end in itself. It is to make the intellect, feelings, and will more vigorous, sane, supple, and resourceful.

The present day objectives of physical education are four-fold: corrective, educational, hygienic, and recreative. It is without question as valuable, if not more so, than German, Latin, or Algebra which is at this time taught in our curriculums.

The lack of trained teachers in this field at the present time is proving a very great drawback to the progress of the recreation movement as it is being interpreted. The demand for trained teachers is far in excess of the supply, and unless the leadership is forthcoming a very vital force in American life will be lost. Our only salvation to induce the teaching of recreation is through education. Therefore, we as teachers and executives should get busy and rearrange our curriculums so that every student is induced into some form of recreation.

Normal Schools throughout our State are doing much toward the advancement of physical education. We have in our own Normal School two special curriculums for the training of teachers in physical education. One is a two year curriculum exclusive for women, and the other is a two year curriculum exclusive for men. It is here that students are prepared to meet the demands of the

[1]Williams, J. F., Organization and Administraiton of Phy. Ed. P. 18.

present day problems in physical education. Courses in every phase are given along with seven supervised instructors in practice teaching. It is here that the students are taught the objectives, methods, and principles of physical education.

Modern school plans should provide indoor and outdoor plans for recreation and physical education in connection with school buildings and grounds for high school children. It is essential that the space be adequate for the practice of healthful activities and games related to vigorous living and the development of spirit. It should not be difficult to secure adequate space as several superintendents stated.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, Of THE ATHLETIC JOURNAL, published monthly except July and August at Chicago, for April, 1928.

State of Illinois, } ss.
County of Cook, }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared John L. Griffith, who, having been duly sworn according to law, deposes and says that he is the Editor and Owner of the ATHLETIC JOURNAL, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and address of the publisher, editor, managing editor, and business managers are:

Publisher, JOHN L. GRIFFITH, Chicago.
Editor, JOHN L. GRIFFITH, Chicago.
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Business Manager, JOHN L. GRIFFITH, Chicago.

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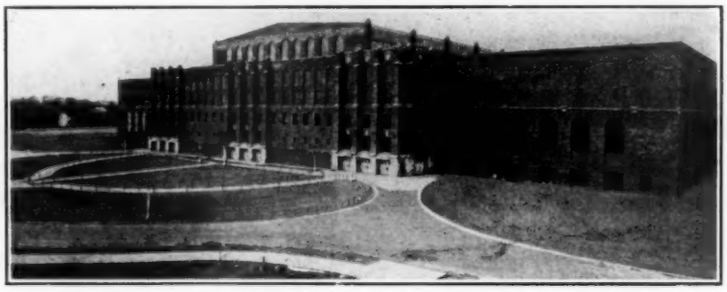

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The National Interscholastic Basketball Tournament

(*Continued from page* 12)

of other years. Especially interesting to the coaches present were the exhibitions of defensive play, individually and as a team, of the teams to reach the semi-finals. The defensive play brought out three main plans: the man-to-man defense over the entire court; the set five-man, zone employment; and the set five-man, man-to-man employment. To these may be added the plan of Oak Park, Illinois, which placed a "sleeper" under their own basket with four players in their defensive side of the floor.

In general, the offensive methods fell under two main plans, i.e., that of the teams whose first endeavor was a fast break and that of the teams whose reliance was placed in a deliberate effort to pierce the defensive formation. However, the exponents of these two general plans did not confine themselves exclusively to their respective plans, for the first at times would have to resort to a deliberate play, and the second might attempt a fast break when conditions were right. But, it was apparent that the greater part of their training had stressed one or the other plan. The endeavor of most of the teams to best the set zone defense was by way of getting the ball into their center on the free throw line who passed out the forwards at the side of the court; or in to the forwards at the side of the court, who then passed to their center on the free throw line, who might pivot and shoot or return the pass to either forward for a shot. Whereupon each of the three men would attempt to "follow-up" the shot.

Frequently the center jump proved to be a disheartening feature of play for those teams which were not fortunate in having tall centers. Otherwise efficient teams, well drilled in floor play, offensive capabilities and defense tactics, were handicapped in their attempts to prove their ability through the control of the center-jump by their more fortunate opponents. This was especially true where a team was behind in the final minutes of play when control of the ball meant a sure victory. For tournament play, if not for league play, it seemed that a more equitable plan would be to allow for the side scored upon to have the ball out-of-bounds under its own basket. This method would tend to allay the evils of stalling, so hopeless to the losing team, in the final minutes of play. At least it would give the trailing team a sporting chance to prove

its ability. What is the good of a whole year of hard, strenuous practice in all the other departments of the game when the work may so easily be undone merely because another team happens to have a taller center?

The checking of a stalling team was more intelligently accomplished in this meet. In past years the defense went out after the ball, if they went at all, cautiously and half-heartedly, as individuals. First one would attempt to force the opponent with the ball and then another. The result was that the defense was broken as a unit and pulled out. The offense was able to carry the ball down the floor more easily. This year, in most cases, the defense went out resolutely as a unit, the whole team advancing as one upon the offense, forcing the ball down the court, thereby bringing an end to the stalling.

Some interesting statistics were noted of the teams which survived the finals. Ashland, Kentucky, champions, and Grand Forks, North Dakota, third place, were out-scored in field baskets by Canton, Illinois, and Vienna, Georgia. The two latter teams. Canton, second place, and Vienna, fourth place, out-scored all of their opponents in field goals.

Ashland averaged 10 field goals to 6 2/5 by opponents per game.

Canton averaged 8 1/3 field goals to 5½ by opponents per game.

Grand Forks averaged 10 2/5 field goals to 9 2/5 by opponents per game.

Vienna averaged 12 field goals to 6 1/5 by opponents per game.

History of Baseball in Detroit

(*Continued from page 9*)

promote non-commercialized competitive athletics, of which baseball is the major sport.

The commission consists of five members. These men adopt rules, enforce penalties, have control of officials and control franchises for intercity contests. Each federation, league, club or association must file a copy of their constitution with the secretary of the commission.

All appeals and protests must be made in writing accompanied by from $5 to $15, depending upon the class of the team making the protest. Officials penalizing a player for violation of any rule must notify the league in which the matter arose and also send a copy to the secretary of the commission.

Last year the Municipal Commission had actual control of forty-four baseball leagues in Detroit, comprising 659 teams.

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Fifth Annual N. C. A. A. Swimming Championship

(*Continued from page* 13)

policy of the Swimming Rules Committee of holding these National Collegiate championship meets in alternate years in the East and in the Middle West, next year's meet should be held at some college or university in the Middle West. The Rules Committee will be glad to receive invitations from the colleges or universities desiring to hold next year's meet.

The summaries and individual results are as follows:

50-Yard Freestyle Swim—Won by J. W. Bryant, Dartmouth College; W. D. Wright, Columbia University, second; C. R. Darnall, University of Michigan, third; F. W. Walaitis, University of Michigan, fourth. Time—24.3s.

100-Yard Freestyle Swim—Won by C. R. Darnall, University of Michigan; J. W. Bryant, Dartmouth College, second; R. H. Harrison, Stanford University, third; Neal Crocker, University of Minnesota, fourth. Time—55s.

220-Yard Freestyle Swim—Won by Shields, Brigham Young University; Albert Schwartz, Northwestern University, second; G. W. Ault, University of Michigan, third; D. J. Creen, Rutgers University, fourth. Time—2m. 19.8s. (new National Collegiate A. A. record).

440-Yard Freestyle Swim—Won by Shields, Brigham Young University; G. W. Ault, University of Michigan, second; E. O. Driggs, Stanford University, third; P. J. Collopy, Northwestern University, fourth. Time—5m. 8.2s. (new American intercollegiate record).

150-Yard Backstroke Swim—Won by R. L. Hinch, Northwestern University; G. E. Hubbell, University of Michigan, second; R. S. Spindle, University of Michigan, third; J. J. Anderson, University of Oregon, fourth. Time—1m. 45.3s.

200-Yard Breaststroke Swim—Won by W. R. Schott, Williams College; R. W. Wagner, University of Michigan, second; E. C. Lennox, Northwestern University, third; Alfred Uihlein, Jr., Princeton University, fourth. Time—2m. 39.7s.

Fancy Diving—Won by W. N. Colbath, Northwestern University, 87.8 points; J. C. Hubbard, Dartmouth, second, 74.75 points; George Saseen, University of Pennsylvania, third, 74.3 points; F. B. Hoar, Springfield Y. M. C. A. College, fourth, 64.6 points.

200-Yard Relay—Won by University of Michigan (R. P. Walker, F. W. Walaitis, J. B. Seager and C. R. Dar-

nall); Stanford University, California, second; University of Minnesota, third; Princeton University, fourth. Time—1m. 39.8s. (new National college record).

300-Yard Medley Relay Swim—Won by University of Michigan (G. E. Hubbell, Thompson, and R. P. Walker); Northwestern University, second; Princeton University, third; University of Minnesota, fourth. Time—3m. 18.2s. (new American intercollegiate record).

Handling of Ground Balls by the Infield

(*Continued from page 7*)

daily, slow and fast, to the right and left of the infielder for a man must judge and time accurately the distance that he will have to go in handling a bounding ball to either side. The fielder must also judge how to come up on a ground ball batted straight at him and must also know when to step back or give ground on such a batted ball. As a rule, most men do not come up fast enough on slow ground balls. However, players should not charge the ball or fight the ball. This term applies to men who come in so fast that they cannot gauge accurately the bound or pick-up and get the ball on the wrong part of the arc cut by the bounding ball. The infielder must be aggressive, but should play the ball and not let the ball play him. The coach should use judgment and a certain uniformity in batting ground balls to the infield. The idea is to develop confidence, fast footwork, nerve and judgment. An infielder loses his confidence if the hitter is erratic in batting to the infield. Infielders should not play all hitters alike, but should know when to come up fast on a ground ball and when to wait for the bound. The speed of the ball and the speed of the runner should determine how the ball should be handled.

Athletics in Secondary Schools

(*Continued from page 37*)

the records of all the schools and publishes the same. In this way championships may be determined. In addition to this regular annual mass championship, biennial individual decathlon contests are held. Medals are given for the boys that score certain points. A city championship banner is awarded to the winner of the mass championship.[88]

[88]Ibid, pp. 206-227.

(*To be concluded in June issue*)

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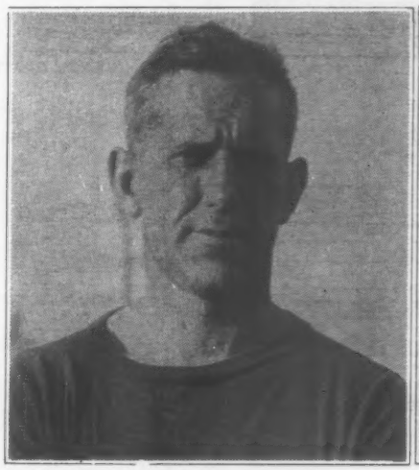

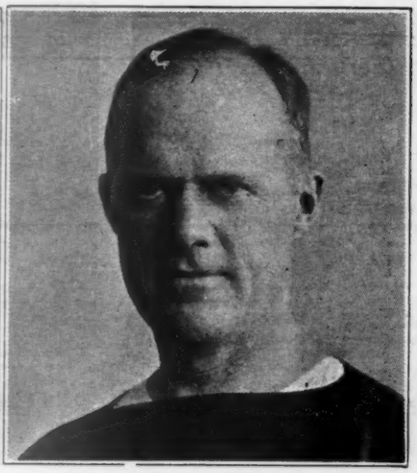

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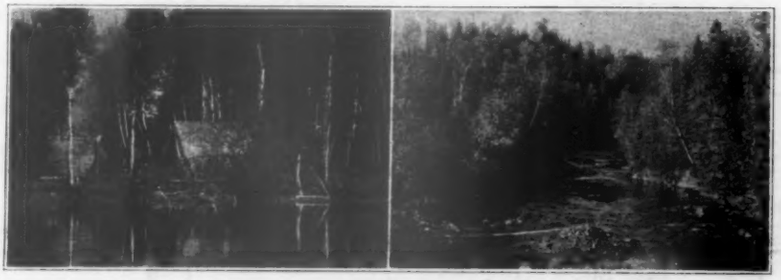

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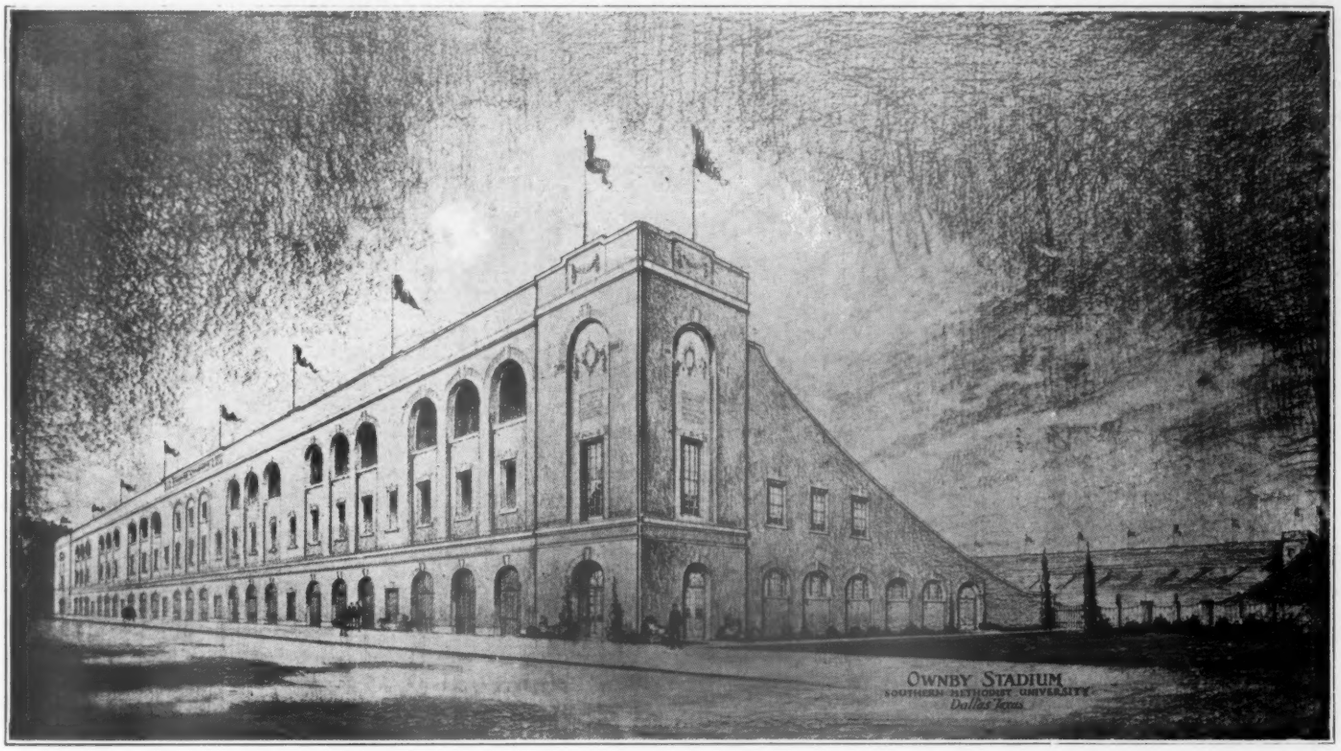

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